The Journal

of the Michigan State Medical Society

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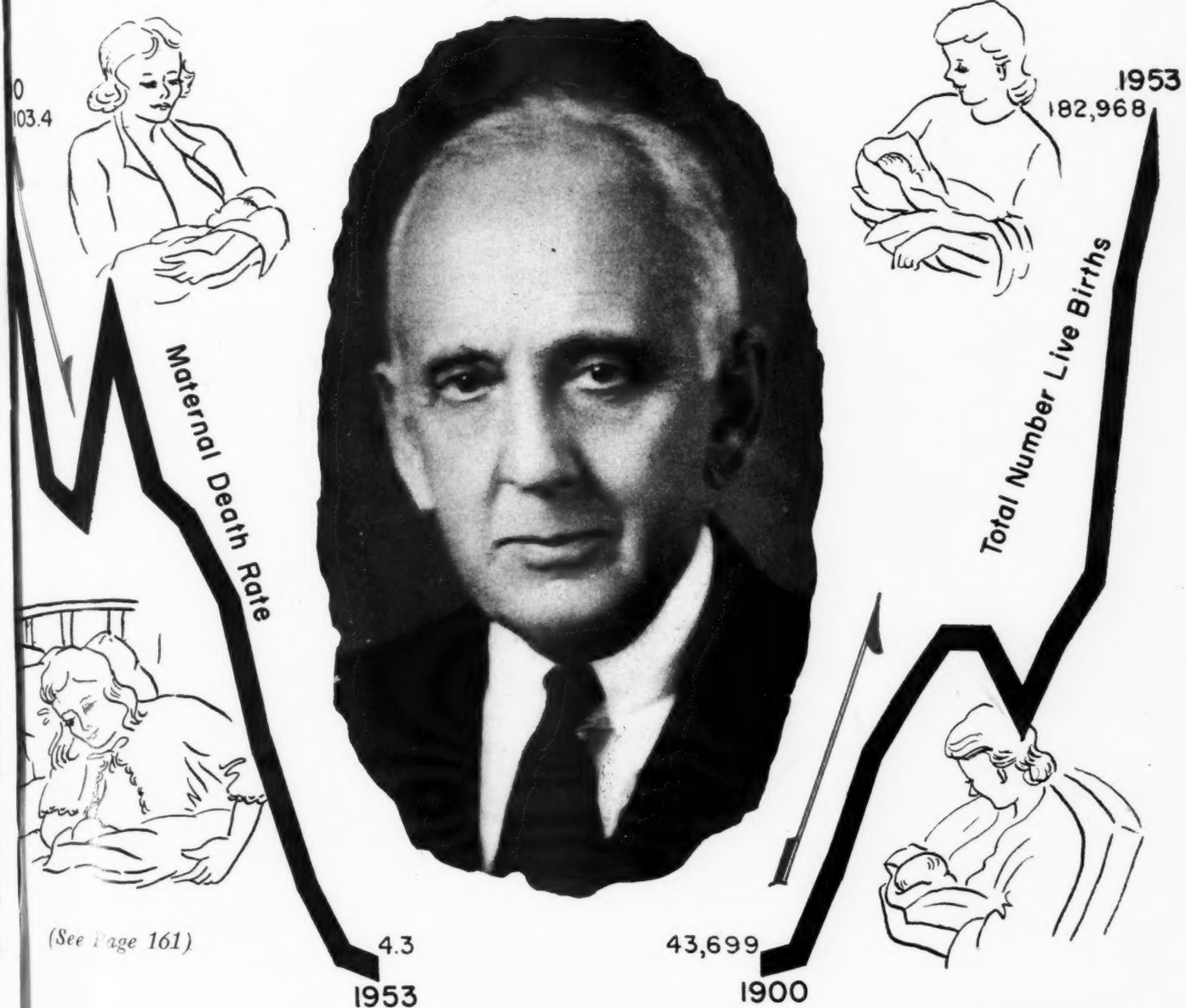
MATERNAL HEALTH NUMBER

dedicated to the memory of

Alexander M. Campbell, M.D.



(See Page 161)

when resistance to other antibiotics develops...

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THE JOURNAL
of the Michigan State Medical Society

VOLUME 54 FEBRUARY, 1955 NUMBER 2

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You and Your Business

BARRY COUNTY WINS ATTENDANCE PRIZE

Members of the Barry County Medical Society will hear a prominent guest speaker sometime during 1955 as a special prize for having the highest percentage of attendance at the 1954 Annual Session. The speaker of their choice will be brought from any part of the United States or Canada at the expense of the Michigan State Medical Society.

The attendance at the 1954 Annual Session broke all previous records. The attendance contest among Michigan's County Medical Societies was an important factor in this happy achievement. In the 1954 contest, Lapeer and Monroe Counties were close behind Barry.

Here, in descending order, are the ten county medical societies with the highest percentage of members attending the 89th Annual Session in Detroit: Barry, Lapeer, Monroe, Eaton, Macomb, Huron, Tuscola, St. Joseph, Wayne, and Sanilac.

Of the fifty-five component county and district medical societies of MSMS, only two were not represented at the 1954 Annual Session. In actual number of registrants, Wayne, of course, was first, followed by Oakland, Genesee, Ingham, and Kent Counties in that order.

HIGHLIGHTS OF EXECUTIVE COMMITTEE OF THE COUNCIL

Meeting of December 15, 1954

Sixty-five items were presented to the Executive Committee of The Council on December 15. Chief in importance were:

- **The financial report** to November 30 was presented, studied, and given approval; bills payable were approved, and payment was authorized.
- **W. S. Jones, M.D.,** Menominee, MSMS President-Elect, was made Chairman of a Subcomittee of The Council to make further investigation of M.D. Placement Program recommendations as offered by the MSMS Rural Medical Service Committee. Other members of the committee are: MSMS President R. H. Baker, M.D., Pontiac; R. L. Novy, M.D., Detroit; and Ralph W. Shook, M.D., Kalamazoo.
- **National Medical Defense Committee:** Chairman W. H. Gordon, M.D., and member M. L. Lichter, M.D., both of Detroit, were present to discuss the need for further co-ordination and integration of medical civil defense activities in Michigan. An early meeting with A. E. Heustis, M.D., Michigan Health Commissioner, to discuss current problems, was recommended by the Executive Committee of The Council.
- **Committee Reports:** The following reports were given consideration: (a) Mental Health Committee, meeting of November 9; (b) Committee on Prevention of Highway Accidents, November 18; (c) Midwest State Medical Officers Conference, November 20; (d) Rheumatic Fever Control, December 1; (e) Geriatrics Committee, December 9; (f) Committee on Arrangements for March 10 Testimonial Banquet, December 14; (g) Committee on Arrangements for March 9 Conference of Interns, Residents, December 14.
- **Wm. A. Hyland, M.D.,** Grand Rapids, Chairman of Michigan's Delegation to the AMA House of Delegates, presented report on the AMA Clinical Session held in Miami, November 29-December 2, which report was accepted by the Executive Committee.
- **President R. H. Baker, M.D.,** was appointed official MSMS representative to attend the 100th Anniversary Celebration of Michigan State College.
- President Baker congratulated the MSMS Public Relations Department on its series of county societies' public relations meetings being held throughout the state.
- **Dr. Don Phillips,** President of Hillsdale College and author of the successful "Phillips 66" technique of group communication, was invited to participate in the program of the Annual County Secretaries Conference of January 30 in Detroit.
- **The County Medical Society Executive Secretaries Conference** of 1955 was scheduled for Tuesday, February 15, at the MSMS Headquarters in Lansing.
- **Dean A. C. Furstenberg, M.D.,** of the University of Michigan Medical School, and Dean G. H. Scott, Ph.D., of Wayne University College of Medicine have accepted invitations to appear on a Panel on Undergraduate Medical Education, to be held at a luncheon on Monday, September 26, 1955, in Grand Rapids (during MSMS House of Delegates Annual Session).
- **Assignment of scientific exhibits** for the eight available spaces at the 1955 Michigan Clinical Institute was made by the Executive Committee.
- **The survey of the Medical Advisory Committee** to Michigan Hospital Service (a committee of The Council) was reported as completed. The

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HIGHLIGHTS OF THE COUNCIL

(Continued from Page 134)

Committee was discharged with high thanks by the Executive Committee of The Council.

- **Legal Counsel J. Joseph Herbert** presented opinions on (a) the question of certifying the death of a patient; (b) re status of chiropodists in hospitals. Legal Counsel also reported that the Gogebic County (Grandview) Hospital legal case had been decided by the Michigan supreme court against the hospital trustees.
- **Public Relations Counsel H. W. Brenneman** reported on recent county medical society PR meetings; proposed program of the January 30 Public Relations Conference; on special dinner for editors and publishers of newspapers to receive MSMS awards at Michigan Clinical Institute; that the Medical Associates brochure would be available from the printer in about 30 days.

Controlled fluoridation of the water supply is in operation in 930 communities in this country with a total population of some 17,000,000. Another 3½ million persons in the nation live in areas that have a beneficial amount of the tooth-decay-preventing element naturally present in their water supplies.—*Philadelphia Medicine,* August 20, 1954.

MEDICAL MEETINGS AND CLINIC DAYS

A list of known medical meetings and clinic days, sponsored by county medical societies and other physician groups in Michigan, follows:

1955		
March 8	Michigan Chapter, American College of Surgeons	Detroit
March 9-11	Michigan Clinical Institute	Detroit
March 11	Executive Committee, MSMS Council	Detroit
Spring	MSMS Postgraduate Extramural Courses	Statewide
April 13	Genesee County Medical Society's Tenth Annual Cancer Day	Flint
April 20	Executive Committee, MSMS Council	Kalamazoo
May 5	Twenty-Seventh Annual May Clinic, Ingham County Medical Society	Lansing
May 11	Annual Clinic Day and Alumni Reunion, Wayne University College of Medicine	Detroit
May 13	Eleventh Annual Clinic Day of the St. Clair County Medical Society J. J. Coury, Jr., M.D., Michigan Bank Bldg., Port Huron, Chairman of Arrangements	Black River Country Club Port Huron
May 18	Executive Committee, MSMS Council	Detroit
June 17-18	Upper Peninsula Medical Society	Gateway
June 6-10	Annual Session, American Medical Association	Atlantic City
June 15	Executive Committee, MSMS Council	Charlevoix
July 14-16	Mid-summer Session, MSMS Council	Mackinac Island
August 18	Executive Committee, MSMS Council	Menominee
September 26-27	Annual Session of the House of Delegates (MSMS)	Grand Rapids
September 28-30	MSMS Annual Session	Grand Rapids
September 25 & 30	MSMS Council	Grand Rapids
October	Clara Elizabeth Fund for Maternal Health and Genesee County Medical Society	Flint
October 13-14	Michigan Cancer Conference	Lansing
Autumn	MSMS Postgraduate Extramural Courses	Statewide

Additions to this list of meetings are invited by the Editor of JMSMS, in order to make this monthly announcement complete and accurate.

Paging Dick Tracy, M.D.

To become detectives in the search for hidden or beginning disease is the challenging role confronting all members of the Michigan State Medical Society as the result of the Society's Periodic Health Appraisal Program.

The Periodic Health Appraisal Committee is composed of fifteen members, specialists and general practitioners, and is a joint committee of the Michigan State Medical Society and the Michigan Health Council. Its report was adopted by the Council of MSMS in the spring of '54, and this "go ahead" impetus was further accelerated last September by a resolution passed in the House of Delegates. Last October each member of the MSMS received a letter setting forth the objectives and outlining what the Committee felt should be included in a minimal Periodic Health Appraisal. The Committee encourages additions to this outline by the individual physician as he sees fit.

It is not enough for us as physicians to pick up only the obvious in disease, as a patrolman might arrest the burglars who have broken a plate-glass window on his beat. True, many of our efforts in medicine will, of necessity, be directed towards the evident in diagnosis, and much of our time will be spent in finding the appropriate treatment in each case. But if our patients are to receive the best in medical care, each of us must frequently doff his patrolman's badge and join the detective force. We must search for the hidden culprit threatening health, for the precursors and the beginnings of disease, and for the poor habits of living which hinder our patients from maintaining good health.

Many of our members are already doing this in an efficient, inspiring way. They are finding time in their busy days to give their patients a "periodic health appraisal", and by so doing are rendering these patients an incalculable service. Their example should stimulate the rest of us who may think we are too rushed, or not adequately trained, or that this is not in our line of medicine, or that we just are not interested. Let us examine these excuses.

Too rushed? Perhaps this is true in regular office time, but we can nearly always make an appointment for the patient to return at a period of our work-day when we can take the time adequately to examine him. In the meantime, the basic laboratory work recommended for all patients can be done first, i.e. blood count, Kahn, urinalysis and chest film. This will save a return trip to evaluate the lab findings, and will conserve both our time and that of the patient.

Not adequately trained? Anyone who has been graduated from a medical school, and is licensed to practice in Michigan is adequately trained to perform a periodic health appraisal. To help all of us brush up in areas in which we may be a little dusty, there will be brief articles in succeeding numbers of our MSMS JOURNAL, each discussing certain aspects of the Periodic Health Appraisal.

Not in our line? True, the bulk of these exams will be done by general practitioners and internists. But even if we are in some other branch of Medicine, we can encourage the patients we see to go to their family physicians, whether general practitioners or internists, and arrange for such a Periodic Health Appraisal. In addition, we can each have one himself, and arrange a similar exam for each member of our family.

Not interested? Almost every day each one of us sees a patient who presents a problem in which we may not be enthusiastically interested. But we attempt to meet this problem anyway, knowing that to do less would mean to fail our patient at a point of need. Sometimes we have even learned to like doing so! The same can be true of the Periodic Health Appraisal. Our patients will progressively come to expect it, and if we don't provide it for them they will look elsewhere, to cultists or to governmental agencies.

Let us be detectives as well as patrolmen in this matter of health care!

JOHN R. RODGER, M.D.
Chairman, Committee on Periodic Health Appraisal

Cancer Comment

CANCER OF THE STOMACH

Prepared by R. C. Hildreth, M.D., Kalamazoo, upon recommendation of the Michigan Cancer Co-ordinating Committee

Cancer of the stomach is regarded by some physicians as the equivalent of a death warrant. This view is fostered by the infrequency of cured cases in the experience of any single physician, as well as by some published reports that stress the pessimistic aspects of the disease. No such implication attaches to cancer of the breast; yet if the patient with cancer of the breast has fixation of the tumor to the chest wall, or distant metastases to bone, no mastectomy is carried out and, in most series, the patient does not figure in the five-year survival statistics. Not so with cancer of the stomach. Most studies scrupulously include every instance of the diagnosis, whether or not the patient ever is examined by a surgeon, and whether or not the diagnosis is confirmed by histologic study of tissue removed from the tumor or one of its metastases.

In studies of cancer of the stomach, we should distinguish between the different stages of the disease at the time treatment is carried out. It is not at all unusual to read that five-year survivors comprise 25 to 30 per cent of all patients with gastric cancer in whom a gastric resection "for cure" has been carried out (i.e., all gross evidence of tumor has been eradicated). The percentages are not very different from those for five-year survivals reported for radical mastectomy for cancer of the breast, and at the time of surgery the two conditions are comparable: as far as the surgeon can tell, the cancer has been entirely removed. The condition of a patient who has a gastric carcinoma that is non-resectable because of fixation to the aorta, for example, is analogous to that of a patient with cancer of the breast which is non-resectable by reason of extension to the chest wall. The fact that clinical examination can establish inoperability in the case of the breast lesion, whereas an abdominal operation is required to establish inoperability in the case of the gastric lesion, does not alter the basic similarity. Until a hopeless situation is disclosed by operation, we should adopt the same attitude of cautious optimism which we entertain toward "operable" cancer of the breast.

There are at least four points that should bolster the physician's thinking when he first diagnoses a cancer of the stomach. The first is the inability of the x-ray appearance to determine resectability. Even tumors that involve the entire stomach, as viewed by the radiologist, may be easily resectable because there is no extension beyond the stomach.

Secondly, operative mortality is going down. In a recent series of 145 patients undergoing primary laparotomy for gastric malignancy at the Cleveland Clinic, operative mortalities were 8 per cent.

Excessive morbidity following gastrectomy has lessened. Although en bloc dissection of involved neighboring structures remains in vogue, fewer patients really need the total gastrectomy procedure. This modern approach has lowered severe nutritional disturbances.

And finally, it is observed that, although the scirrhous form carries anominous prognosis, there are apparent cures in all other histo-pathologic types of gastric carcinoma.

Three-fourths of all patients with carcinoma of the eyelid are past fifty years of age.

* * *

The so-called rodent ulcer, with either nodules or pigment, is the commonest form of cancer seen on the eyelids.

* * *

Patients with repeated positive smears must be followed with the greatest care in spite of repeatedly negative cervical and endometrial biopsies.

* * *

Nothing can be less true than to assume that all cancer surgery or all radiation therapy is well executed, adequate and excellent.

PR REPORT

COUNTY SOCIETY MEETINGS

"Among county medical societies the realization is growing that (1) from here on, organized medicine must have a positive, permanent public relations activity and (2) much of this activity, to be worthwhile, must be carried on by the county medical society in the home community and in the doctor's own office.

"Winning friends for Medicine at home—in Michigan and elsewhere—is the foundation for continued medical freedom. Solution of the problem is in your hands."

The truth of these lines—taken from the foreword to the comprehensive PR manual of MSMS, "Winning Friends for Medicine"—and the determination of county medical societies to stimulate local PR activities during 1955 have become more and more evident in the continuing series of meetings planned by county society leaders for consultation with MSMS and officers and PR representatives.

So valuable were the first meetings, scheduled by individual county societies, that MSMS is now encouraging district get-togethers so that the movement towards a unified, statewide PR program, carried on at the local level, may pick up even greater momentum in the months to come.

The pattern for each of the county meetings was substantially the same. County society officers, Public Relations Committee members, MSMS delegates, and the District Councilor, gathered in the afternoon or evening to discuss PR plans. Present as consultants or advisors were MSMS officers, PR committeemen, and PR staff members. Using the 26-point manual as the foundation, county societies reviewed and evaluated PR programs currently under way (as well as single projects already completed), then point-by-point mapped out what might be done to strengthen PR programs in 1955. Careful consideration was usually given, also, to long-range planning of projects suitable for future years.

In each instance the aid available from MSMS was explained and stressed.

Typical reactions among county society members have been:

"I can't think of a single worthwhile PR project or program that isn't touched upon somewhere in 'Winning Friends for Medicine'." "Before this I never realized all of the PR services and aids available to county societies from MSMS." "It certainly has been enlightening to sit down and figure out where we have been, and where we want to go in our PR program . . . 'Winning Friends for Medicine' is both a foundation and a map for the future."

President Robert H. Baker, M.D., has taken part in many of the county meetings, as has MSMS PR Committee Chairman C. Allen Payne, M.D., and Secretary L. Fernald Foster, M.D.

With single-county meetings still a possibility in several areas, particularly in Jackson and Midland, here is the schedule so far in the series:

1. Macomb—Mt. Clemens, Nov. 1, 1954
2. Muskegon—Muskegon, Nov. 3, 1954
3. Calhoun—Battle Creek, Nov. 10, 1954
4. Oakland—Bloomfield Hills, Nov. 23, 1954
5. Lapeer—Lapeer, Nov. 20, 1954
6. St. Clair—Port Huron, Dec. 6, 1954
7. Washtenaw—Ypsilanti, Dec. 7, 1954
8. Kalamazoo—Kalamazoo, Dec. 8, 1954
9. Kent—Grand Rapids, Dec. 10, 1954
10. Saginaw—Saginaw, Dec. 14, 1954
11. Genesee—Flint, Jan. 4, 1955
12. Berrien—St. Joseph, Jan. 5, 1955
13. Grand Traverse—Traverse City, Jan. 7, 1955
14. Ingham—Lansing, Jan. 17, 1955
15. Ottawa—Holland, Feb. 18, 1955

Here is the preliminary grouping of county and district societies for the series of PR meetings planned during the first six months of 1955:

1. Huron-Sanilac-Tuscola
2. Gratiot-Isabella-Clare
3. Hillsdale-Lenawee
4. Clinton-Shiawassee-Eaton
5. Barry, Ionia-Montcalm
6. Branch, St. Joseph
7. Allegan, Cass, Van Buren
8. Wexford, Missaukee, Manistee, Leelanau and Benzie
9. Antrim-Charlevoix-Cheboygan and Emmett
10. Chippewa-Mackinac, Delta-Schoolcraft, Marquette-Alger-Luce
11. Houghton-Baraga-Keweenaw, Dickinson-Iron, Gogebic, Menominee and Ontonagon
12. Alpena-Alcona-Presque Isle, Otsego, Montmorency, Crawford, Oscoda
13. Roscommon, Ogenaw, Gladwin and Kalkaska
14. Bay-Arenac and Iosco
15. Mason-Mecosta-Osceola and Lake

THE SECRETARY'S LETTER from the AMA recently carried a classic example of bureaucracy at work under Great Britain's scheme for socialized medicine. *The Journal AMA* correspondent in England gave the following report of correspondence between the Ministry of Health and a certain hospital management committee concerning the composition, strength, and size of toilet tissue:

"The Ministry takes exception to the quality of the paper purchased by the committee. It is said to contain 20 per cent 'mechanical wood' and to burst at 5¼ to 7 pound pressure, whereas the specified minimum

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AMA Washington Letter

THE MONTH IN WASHINGTON

With the 84th Congress well into its first session, all indications point to an active year in medical legislation. Many of the bills will founder somewhere along the way, but as of now an imposing number are lined up awaiting consideration in Senate and House.

Confirmation that medical problems rank high in the administration's work schedule for Congress came early in January in President Eisenhower's State of the Union Message. This is the address, deliverd in person before a joint meeting of Senate and House, in which the President annually outlines in general terms the condition of the country and the new legislation he believes should be enacted.

This message highlighted the President's objectives, but did not tell in specific terms how he expected to reach them. The details came later, in five additional messages to Congress, including one on health on January 24. The President wants Congress to take action on the following health and medical items.

1. A federal health reinsurance service. This idea was rejected by the House last year, but neither Mrs. Hobby nor Mr. Eisenhower has given up hope for it.

2. A plan to insure better and more uniform medical care for public assistance recipients through larger U. S. appropriations and more administrative controls.

3. Federal assistance in construction of health facilities and in providing more trained health personnel (other than physicians).

4. A new federal program to combat mental illness and return more mental patients to useful lives outside institutions.

5. An improved federal program for aiding crippled children and for maternal and child health.

6. Strengthening of the pure food and drug laws to give greater consumer protection.

7. More attention to "the increasingly serious pollution of our rivers and streams and the growing problem of air pollution."

8. An expanded program for the medical care of military dependents.

9. A voluntary health insurance program for federal civilian employes with U. S. contributions and payroll deductions authorized for the employes.

So much for what the Republican President hopes to get through Congress. It is too early to say how much of this program will have the support of the Congress, now under Democratic control. It is clear, however, that many leading Democrats want to enact some legislation the President didn't include in his program. In the early weeks of the session they introduced scores of bills to carry out their ideas.

Federal aid to medical education is prominent in the plans of many of the Democrats, and some of the Republicans. The bills cover a wide range, some restricted to construction grants but others offering help in meeting operating expenses and incentives to increase the number of students. Other bills offer federal grants to voluntary health plans to subsidize coverage of the indigent, the "medically indigent," the unemployed and the aged. Because the administration has declared itself opposed to subsidies, it is unlikely that any measures of this type will win the support of Mrs. Hobby's department and the White House.

Members on both sides of the aisle also are proposing greater emphasis on research seeking the causes and cures of such diseases as cancer, heart disease, mental illness and arthritis. Some of these bills fit in with the Eisenhower program and philosophy, and are likely to have White House support at the hearings.

This tendency to stimulate more basic medical research, both at the federal level and through state grants, may be an important factor when Congress gets around to passing the appropriation bills for the various Institutes of Health, the research arm of U. S. Public Health Service.

Several years ago a Democratic Congress took a serious interest in a bill for federal aid to local public health departments. Some of the influential Democrats have revived this idea, and are working for its passage this session. As expected, the old Truman-Ewing plan for national compulsory health insurance again is before Congress. The first one to introduce a bill along these lines was Rep. John D. Dingell, a sponsor of the original plan. Later others joined with him in backing the idea, but up to now the open support for it is not extensive on Capitol Hill.

What's New in Reinsurance

The eminent Secretary of Health, Education and Welfare has delivered a series of quotable phrases which bear repetition. She has said that the administration is backing reinsurance because "time is running out against those who seek to keep health insurance on a voluntary basis. . . . We

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THE MONTH IN WASHINGTON

(Continued from Page 150)

still strongly believe in a bill. . . which seeks to compress the experimentation of the next 20 years into less than half the time through the simple mechanism of a broad sharing of risks. We believe such a bill will . . . nurture rather than weaken the voluntary health insurance concept. . . . I very much hope that the AMA will see its way clear to support health insurance."

Now, while the AMA has not given unequivocal approval to voluntary prepayment medical services, its position on this federal tax on the premiums paid for these services is stated clearly. The AMA has believed that the insurance carriers themselves have all the reinsurance money needed and that voluntary health insurance is making extremely rapid progress without reinsurance. It notes that reinsurance will not make uninsurable risks insurable and that the scheme thereby holds out false promises. It feels that without an objectionable subsidy, reinsurance would not reduce the cost of insurance or overcome the inertia of the unwilling buyer. The proposal introduces the federal government into an area where it does not properly belong.

This position is shared with much of the insurance industry, the United States Chamber of Commerce and many groups. It seems not to be shared by the Chief Executive who plans on resubmitting a health reinsurance plan to the 84th Congress. It would not serve the subscribers to Michigan Medical Service but it might very well prove to be a boon to the dilettantes who do best with other people's money. And it will be most interesting to observe the bipartisan approach to an inspection of the reinsurance proposal.—WILLIAM BROWNE, *Detroit Medical News*, December 27, 1954.

PR REPORT

(Continued from Page 148)

burst is at 8 pounds. Again, the pieces are 6½ inches long instead of the prescribed 6 inches, which means, as a little calculation shows, that instead of getting 100 pieces in a roll, the hospital is getting only ninety-two. Even that is not all, for, if the hospital rolls weigh 12 ounces including the core, the Stationary Office rolls weigh 12 ounces without the core, another loss of 5 per cent to the hospital.

"The management committee points out that its 12-ounce rolls do exclude the core, so that the 5 per cent shortage does not arise. As for the length of the pieces, it is considered that 6½ inches provides a greater margin of safety than 6 inches. No adverse effects have been observed from using paper of lower bursting strength or including mechanical wood. The important thing is that the management committee claims that by using a toilet paper that does not comply with specifications something like $560 a year is saved."

WAYNE UNIVERSITY STUDENTS VISIT RESEARCH LABORATORIES

Members of the senior class of the Wayne University College of Medicine and their wives visited Eli Lilly and Company, December 19-22, 1954.

While guests of the Lilly's, they inspected the Lilly Research Laboratories and toured pharmaceutical, biological, and antibiotic production facilities.

L. M. Fahl, Lilly representative in Detroit, who accompanied the group to Indianapolis, appears at the extreme right of the first row.

Special Events During the Michigan Clinical Institute

A Testimonial Luncheon, to honor Alexander Brunschwig, M.D., of New York City and Frederick A. Coller, M.D., of Ann Arbor will be held Wednesday, March 9, at 12:15 p.m. in the English Room of the Sheraton-Cadillac Hotel. Sponsors of this luncheon are the Michigan Division and the Southeastern Michigan Division of the American Cancer Society, and the Michigan Cancer Coordinating Committee.

Following luncheon, Dr. Coller will speak on "Enemies of Health" and Dr. Brunschwig will talk on "Contribution of the Laity in the Fight Against Cancer."

All MSMS members are cordially invited to attend. For reservation, contact Edward W. Tuescher, 4811 John R, Detroit.

* * *

The Michigan Industrial Medical Association will hold its Sixth Annual Health Day on Wednesday, March 9, at the Sheraton-Cadillac Hotel, Detroit. The meeting will begin with luncheon in Parlors G-H-I at 12:30 p.m. An honorary scroll will be presented at 3:00 p.m. in the Grand Ballroom to one who has rendered distinguished service to medical education in Michigan and the nation.

Arthur Vorwold, M.D., and O. Todd Mallory, Jr., M.D., will discuss "Industrial Health Education at the University of Michigan and at Wayne University Medical Schools," in Parlors G-H-I, beginning 3:30 p.m. This will be followed by the Annual Business Meeting at 4:30 p.m.

The Annual Dinner of MIMA will be held in the Sheraton Room at 6:30 p.m., when Ralph L. Lee, nationally known speaker of wide experience in the fields of engineering, sales and industrial research, will talk on "The Feel of a Firm."

All MSMS members are cordially invited to attend. For reservation, contact Lyndle R. Martin, M.D., 2000 Second Avenue, Detroit 26.

* * *

The Michigan Regional Committee on Trauma, American College of Surgeons, will hold a meeting on Wednesday, March 9, at the Sheraton-Cadillac Hotel, Detroit. Beginning with color television on trauma subjects at 11:00 a.m. in the Grand Ballroom, the meeting will move to the Sheraton Room at 12:30 p.m. for luncheon, followed by a business meeting.

The afternoon program on trauma, to be held in the Grand Ballroom as part of the MCI program, will run from 1:30 to 3:00 p.m. Just before adjournment of the Assembly, a scroll will be presented to a member who has rendered a distinguished service to medical education.

All MCI registrants are most cordially invited to attend this meeting.

Michigan Chapter, American College of Surgeons Clinic will be held Tuesday, March 8, in the Grand Ballroom of the Sheraton-Cadillac Hotel.

PROGRAM

A.M.

8:00 Registration—Outside Grand Ballroom

9:15 "Sarcoma of the Ovary"—A review, with report of an unusual case
ROBERT G. EDKINS, M.D., Highland Park

9:30 "Carcinoma in Situ of the Cervix"
LYNDON E. LEE, JR., M.D., P. J. MELNICK, M.D., and HARRY E. WALSH, M.D., Eloise

9:45 "Carcinoma of the Esophagus"
G. S. WILSON, M.D., JOEL E. POWERS, M.D., CHAS. G. JOHNSTON, M.D., Detroit

10:00 "Regional Enteritis"
CHARLES S. ROGERS, M.D., JAMES BARRON, M.D., and LAWRENCE S. FALLIS, M.D., Detroit

10:15 "Mistaken Diagnosis in Appendicitis"
ROBERT E. PAXTON, M.D., Lansing

10:30 "Intestinal Decompression Sound and Early Surgery in the Management of Acute Small Intestinal Obstruction"
M. O. CANTOR, M.D., Detroit

Discussion

11:00 "Richter's Hernia"
ROBERT W. GILLESPIE, M.D., and MERLE M. MUSSELMAN, M.D., Eloise

11:15 "An Evaluation of the Surgical Procedures for Femoral Hernia"
M. K. PASTORIUS, M.D., D. J. BARTON, M.D., LYLE D. MILLIKEN, M.D., and BROCK E. BRUSH, M.D., Detroit

11:30 "The Treatment of Ruptured Tendons in the Hand"
PRENTIS J. WALKER, M.D., and JOSEPH L. POSCH, M.D., Detroit

11:45 "Use of Bilobe Pedicle Flap Grafts in the Treatment of Decubitus Ulcers"
ROBERT T. CROWLEY, M.D., and W. O. NICKEL, M.D., Dearborn

Discussion

Luncheon, 12:00 Noon

P.M.

2:00 "Traumatic Rupture of the Spleen"
T. D. GREKIN, M.D., Eloise

2:15 "Splenic Trauma"
FRANK H. POWER, M.D., Traverse City

2:30 "Diagnostic Splenal Portal Venography"
JOHN OREBAUGH, M.D., Ann Arbor

Discussion

3:00 "The Swollen Arm Following Radical Mastectomy"
F. D. DODRILL, M.D., Detroit

3:15 "Review of 100 Consecutive Cases of Thyroidectomy"
JAMES B. RAYMER, M.D., and H. B. FENECH, M.D., Detroit

3:30 "Hurthle-Cell Tumors of the Thyroid"
LAWRENCE W. GARDNER, M.D., Detroit

3:45 "Chronic and Delayed Traumatic Cerebrospinal Fluid Rhinorrhea as a Source of Recurrent Bouts of Meningitis"
RICHARD C. SCHNEIDER, M.D., and JOHN M. THOMPSON, M.D., Ann Arbor

Discussion

4:30 Business Meeting—Election of Officers

6:30 Cocktails

7:15 Banquet—Grand Ballroom

The JOURNAL
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Alexander McKenzie Campbell

An Appreciation

By J. Duane Miller, M.D.
Grand Rapids, Michigan

SERVICE to patients and devotion to the principles of good medical practice, to God, his family, and his country were the keynotes of Alexander McKenzie Campbell's life.

Dr. Campbell's devotion to the welfare of patients during over fifty years of practice was the outstanding characteristic of Dr. Campbell's professional life. Personal service rather than personal gain were, in his mind, of paramount importance. Whether rich or poor the interest in, and treatment of, his patients and their welfare was steady and sustained.

Dr. Campbell's interest in his patients and his devotion to the practice of good medicine led him from the time of his graduation to seek knowledge and experience above the average, this sometimes at great personal sacrifice. He thereby became the outstanding doctor in his specialty in the community in which he practiced.

When he had reached the peak of his professional attainments he then devoted the remainder of his life to the improvement of the care of mothers and infants and improvement of the practice of his specialty throughout the state of Michigan.

Dr. Campbell's ethical, polite, and kindly treatment of his professional associates was always above reproach but was never allowed to interfere with those things that were in the best interest of the patients under his care or that he saw in consultation. His devotion to God was equal to that of his service to humanity and while he served for many years on the vestry of the church in his parish, his practice of Christian principles in his dealings with patients was a daily and practical application of his devotion to the Christian religion.

In early life Dr. Campbell married a gifted and talented young lady. To this union were born two splendid daughters. Dr. Campbell's devotion to his wife and to the welfare of his wife and children ended only with his departure from this life.

Dr. Campbell's sense of duty to his adopted country caused him to enlist twice in its service during periods of emergency. During each of these periods he served diligently the needs of the sick and wounded to the best of his ability.

Throughout his life Dr. Campbell maintained a fine and active interest in the practice of good medicine, his mind constantly searching for the application of research and development in the care of mothers and infants, and a flexible nature that allowed him to develop and apply these methods to the improvement of the care of patients.

Dr. Campbell's understanding of the fundamental purpose and needs of the practice of medicine made him an excellent practitioner. His interest in the improvement of maternal and infant care and his daily practice thereof made him the leader of his profession in his generation. The example he set for his associates in his treatment of patients, his devotion to good medicine, his relation to the medical profession and its improvement and the care of patients is beyond description.

Maternal Mortality Studies in Michigan

By Harold A. Ott, M.D.

Royal Oak, Michigan

THIS ISSUE of THE JOURNAL, reporting on certain causes of maternal deaths, is an appropriate memorial to the late Alexander MacKensie Campbell, M.D. His contribution to the constant decrease in maternal mortality cannot be reduced to or suggested by a few paragraphs of tribute. The history of maternal health activities in Michigan reflects the continuity and intensity of his interest and the breadth of his vision. Dr. Campbell's counsel and spirit pervaded all, and directly fashioned many.

Aroused by the large number of maternal deaths throughout the nation, the late George W. Kosmak, M.D., suggested in 1917 that the New York Academy of Medicine study the causes of these deaths. Such was delayed, however, until 1928 when Dr. Kosmak and Ralph W. Lobenstine, M.D., were deputized to study the "public health problems of obstetrics as they affect New York City."

The Shepard-Towner Act of 1923 provided federal support to state health departments for the establishment of Maternal and Child Health Sections; further federal funds for increased activities in these fields became available with the Social Security Act of 1935. Lillian B. Smith, M.D., was appointed Chief of the newly formed section in Michigan in 1925. Two years later, under Dr. Smith's direction, and with the approval of the Michigan State Medical Society, Florence Knowlton, M.D., began a field study of deaths associated with childbirth in out-state Michigan. As the study developed, Joseph H. Curhan, M.D., made a similar study of such deaths in Detroit. Dr. Knowlton made a progress report of 749 out-state maternal deaths to the Michigan State Medical Society in 1928. Dr. Curhan's progress report on 259 Detroit maternal deaths was made to Henry F. Vaughan, M.D., Detroit Commissioner of Health, in 1929.

The full study was completed in 1930. A total of 1,627 deaths occurring between July 1, 1926, and December 31, 1928, were investigated, and narrative and tabulated reports made. It is significant that this study was not restricted to the data from the death certificates. Personal visits were made to each physician who attended these women as well as visits to those hospitals where hospital care was given. It is unfortunate that these data were not fully published and that the study was not given the recognition which it deserved. Its significance and value may be suggested by comparing the causes of death determined by this study with those of the current study as shown in the statistical data presented by Dr. Hersey in this issue. Mention also should be made that the 1926-1928 study commented specifically regarding deaths which were considered preventable, although no assignment of responsibility was attempted.

"Maternal Mortality in New York City. A Study of All Puerperal Deaths, 1930-1932" was published in 1933. It aroused considerable criticism and discussion within the profession, yet the challenge it contained was recognized and accepted. Maternal health committees were formed throughout the country to study the problem of maternal care. The Maternal Welfare Committee of the Michigan State Medical Society was organized in 1933, with D. C. Cameron, M.D., of Alpena as its first chairman. Dr. Campbell, one of the charter members, was appointed chairman in 1934, which position he held until 1939 when he retired from private practice.

Under his chairmanship, with the co-operation of other interested organizations and individuals, Michigan played a leading part in developing program designed to improve maternity care. In 1936, Dr. Campbell and Norman Miller, M.D., conducted a six-week refresher course in obstetrics in Traverse City, Petoskey, Alpena and Grayling. But more than this was needed. Realizing that information regarding maternal health services derived only from a study of maternal deaths obviously would be distorted, the Maternal Health Committee surveyed the quality and distribution of maternal health services as reflected in some 20,000 births. This study was published in 1938. It is interesting to find that at this time 96.5 per cent of registered births were attended by doctors of Medicine and that 46.9 per cent occurred in hospitals. The inadequacies found by this survey

became the major concerns of the committee during the following years.

As special advisor of the Michigan State Medical Society to the Maternal and Child Health Section of the state health department, Dr. Campbell developed educational programs throughout the state. Refresher courses were held at the University of Michigan. For greater effectiveness in this program, obstetrical field consultants were employed. Clair Folsome, M.D., filled the position from 1938 to 1941, followed by Russell de Alverez, M.D., until he left for military service in 1944. Dr. Campbell retired from private practice in 1939 to become full-time consultant to the Maternal and Child Health Section, the salary being underwritten by the W. K. Kellogg Foundation. In this capacity he consulted with individual physicians, health officers, hospitals, and officers of local medical groups. He emphasized the continuing necessity for education in addresses before both medical and lay organizations.

While chronology is essential to coherence in any historical survey, such cannot always be maintained because of concurrent developments. In 1927 the Maternal Welfare Committee of the Wayne County Medical Society was established with Milton A. Darling, M.D., as chairman. It participated in the 1926-1928 study made by Dr. Curhan. In 1941, under the chairmanship of George Kamperman, M.D., it started a detailed critical study of all maternal deaths in Detroit. The chief of the obstetrical staff of the hospital where the death occurred was asked to report the details to the committee. Objections were raised because identity was known, but these did not hamper the study. A report, reviewing 135 deaths, was published in *The Detroit Medical News* in 1942.

The study, interrupted by the war, was resumed in 1945. With A. E. Catherwood, M.D., as chairman, the committee studied a survey made of the methods utilized by similar committees in other cities by G. M. Byington, M.D., the representative of the Detroit Department of Health on the committee. A form, designed to record detailed, comprehensive, and uniform data was adopted. From 1945 to 1950 Dr. Byington personally investigated all the deaths, submitting the report form to the committee. This report carried only a serial number, the identification data being contained on a detachable sheet which Dr. Byington, acting as secretary of the committee, retained. The deaths were reviewed by a subcommitte for the determination of the cause of death, preventability, and responsibility. Reports were made to the society and published annually in *The Detroit Medical News,* as have the reports of all subsequent committees.

Open meetings of the committee, under the chairmanship of Leonard Heath, M.D., were inaugurated in 1949, all members of the profession, including medical students, interns, and residents being invited. A separate letter of invitation was sent to the attending physician by the secretary. The free discussion of the cases, devoid of identifying material, rapidly became an effective means of education. However, few attending physicians accepted the invitations. In 1950 the committee was given permission to send a letter detailing its findings and discussion to the attending physician.

During 1951 through 1954, with the writer as chairman, additional methods designed to gain greater effectiveness for the study were adopted by the committee and approved by the Council of the society. Case protocols were prepared in a uniform manner and sent prior to the meeting to the attending physician along with an invitation to attend, to all members of the committee, and to the obstetrical departments of the hospitals in Wayne County. Members of the committee, selected in rotation, studied the cases and prepared their discussion in advance of the meeting. An evaluation form was devised to facilitate uniformity in reporting the findings of the committee. A review of maternal deaths in Detroit for the five-year period, 1946-1950, was presented by the writer before the meeting of the Central Association of Obstetricians and Gynecologists in Detroit in 1951. Since 1951 an internist and a pathologist have been members of the committee. An anesthesiologist was included in 1954. Since 1953 the committee has sent a letter of its detailed findings and evaluation to the hospital administrator, its chief of staff, as well as to the attending physician. Complete anonymity is still retained in all discussions, the society secretary presently being supplied with only such data as is needed to send the appropriate letters by the State Department of Health. After these have been completed, these data are destroyed.

Based upon the material from the study of maternal deaths, the Michigan Society of Obstetricians and Gynecologists now devotes one of its

meetings each year to a discussion of the problems involved, including selected illustrative cases. The data from the Wayne County study is alternated yearly with that from the Michigan State study.

During the years, other local studies were made, including Grand Rapids, Pontiac, and Flint. In 1949, the Maternal Health Committee of the Michigan State Medical Society, with Robert B. Kennedy, M.D., as chairman, developed a plan, for the study of all maternal deaths in Michigan. This was presented to and accepted by both the Council of the Michigan State Medical Society and the State Department of Health. The personal interview and detailed questionnaire method developed by G. M. Byington, M.D., was adopted for the gathering of data. Since the Michigan plan of study has received much commendation and is serving as a model for others subsequently established, certain of its features deserve mention.

The Michigan study includes all reported maternal deaths as well as deaths from other causes of women known to be pregnant at the time or within thirty days of their death. All such deaths are directed to Goldie B. Corneliuson, M.D., of the Maternal and Child Health Section of the Michigan Department of Health. Dr. Corneliuson was appointed assistant director of the section in 1936, being named chief upon the retirement of Dr. Lillian Smith in 1946. All processing of reports is done under her direction, including the notification sent to the visiting obstetrician who is to make the field study, the receipt of the completed report, the assignment of a code number, the removal of all identifying data, and the distribution of the copies of the coded report.

The state is divided into ten districts, to each of which at least one visiting obstetrician is assigned. These are qualified obstetricians-gynecologists, the majority being diplomates of the American Board of Obstetrics and Gynecology. They are notified promptly after a death report is received by the State Department of Health. Each case is carefully studied by one of the visiting obstetricians and includes a review of the hospital records, pathology protocol, and other pertinent documents. Interviews are had with the attending physician, the consultants, and hospital personnel. On occasion, if data cannot be obtained from professional sources, relatives or others who may have significant information are interviewed. From these data the detailed form is filled out for further study. A summary by the attending physician is included when possible. In addition, the visiting obstetrician prepares a summary of the factual data and includes comment upon the adequacy of the hospital facilities and personnel as well as upon the completeness of the medical records.

The completed report, identified only by code, is analyzed by the Evaluation Subcommittee of the Maternal Health Committee. It judges whether the death was due to obstetrical or nonrelated causes and whether it should be considered preventable or non-preventable. For preventable deaths, responsibility is assigned to the patient, the physician, the consultant, the hospital, or to any combination. Whenever possible, the factors involved also are determined. The committee currently is composed of the Professors of Obstetrics and Gynecology at the University of Michigan and Wayne University and a practicing obstetrician.

In turn the reports are received by the Publications Subcommittee which further study the data, make final classifications, and prepare the material for publication. Except for a paper presented before the Central Association of Obstetricians and Gynecologists in 1953, the papers contained in this issue of THE JOURNAL are the first to be published. Before any data or comment based upon these reports may be released for general publication, they must be reviewed and approved by the Council of the Michigan State Medical Society. County societies, such as Wayne County since 1950, are furnished with a copy of the code-identified report for independent analysis and action.

This study, the co-operative efforts of the Maternal Health Committee and the State Department of Health, became statewide in 1950. Harry A. Pearse, M.D., was chairman of the committee at this time, with the following as chairmen of the related subcommittees: Maternal Mortality Study, Alexander M. Campbell, M.D.; Evaluations, Norman F. Miller, M.D.; Publications, Palmer E. Sutton M.D. Under their direction, with the capable and vigorous assistance of the entire committee, the results of this detailed and thorough study are now presented as a preliminary report to the profession at large. The study, now in its fifth year, is destined to continue indefinitely.

While maternal mortality is one of the major concerns of the committee, it continues active in

many other phases of maternal care. Contributions to the advances in maternal welfare in Michigan have been numerous and varied. It is difficult, if not impossible, to give proper credit to the many who through the years have given generously of their time, study, and matured professional experience. It is realized that the loyalty and self-effacement of many may appear unrecognized and unappreciated, yet it seems only proper to list the chairmen of the Wayne County and Michigan State Medical Societies under whose leadership so much has been contributed by so many to the increasingly better health of women in Michigan.

MICHIGAN STATE MEDICAL SOCIETY
Maternal Health Committee

Chairmen
_____
_____
_____
_____
_____
D. C. Cameron, Alpena
A. M. Campbell, Grand Rapids
A. M. Campbell, Grand Rapids
A. M. Campbell, Grand Rapids
A. M. Campbell, Grand Rapids
A. M. Campbell, Grand Rapids
A. M. Campbell, Grand Rapids
W. F. Seeley, Detroit
H. W. Wiley, Lansing
C. E. Toshach, Saginaw
C. E. Toshach, Saginaw
C. E. Toshach, Saginaw
A. E. Catherwood, Detroit
A. E. Catherwood, Detroit
R. B. Kennedy, Detroit
R. B. Kennedy, Detroit
R. B. Kennedy, Detroit
H. A. Pearse, Detroit
H. A. Pearse, Detroit
P. E. Sutton, Royal Oak
P. E. Sutton, Royal Oak
P. E. Sutton, Royal Oak

3019 N. Woodward

WAYNE COUNTY MEDICAL SOCIETY
Maternal Welfare Committee

Years	*Chairmen*
1927-1928	M. A. Darling
1928-1929	M. A. Darling
1929-1930	H. Henderson
1930-1931	H. Henderson
1931-1932	M. A. Darling
1932-1933	J. P. Pratt
1933-1934	J. P. Pratt
1934-1935	H. B. Cushman
1935-1936	H. B. Cushman
1936-1937	G. Kamperman
1937-1938	H. B. Cushman
1938-1939	M. A. Darling
1939-1940	O. C. Foster
1940-1941	R. W. Alles
1941-1942	G. Kamperman
1942-1943	G. Kamperman
1943-1944	G. Kamperman
1944-1945	A. E. Catherwood
1945-1946	A. E. Catherwood
1946-1947	R. B. Kennedy
1947-1948	R. Whiteley
1948-1949	R. Whiteley
1949-1950	L. Heath
1950-1951	L. Heath
1951-1952	H. A. Ott
1952-1953	H. A. Ott
1953-1954	H. A. Ott
1954-1955	H. W. Longyear

TIC DOULOUREUX

The use of a fairly new drug to stop what has been sometimes described as "the worst pain in the world," that coming from tic douloureux, has been reported from the November meeting of the American College of Surgeons, at Atlantic City. . . . Eye complications, including the loss of an eye, had too often been the sequellae of what had previously seemed the best remedy, facial nerve surgery. . . . The newly-used drug is stilbamidine, and it is reported that it seems somehow to paralyze the fifth nerve causing the trouble, without affecting other nerves. . . . The clue to the drug's new use came when patients who were taking stilbamidine for internal fungus diseases reported that their cheeks felt numb. This gave the idea of trying it for tic douloureux to Dr. George W. Smith, neurosurgeon of Johns Hopkins Hospital, Baltimore, and Dr. Joseph M. Miller, of the VA Hospital, Fort Howard, Md. . . . It is reported that the drug has completely eliminated pain in fifteen of the first sixteen patients, with the first patient on whom it was tried being completely free from pain after twenty-five months. The sixteenth patient is reported 80 per cent free from pain, and it is suggested that he may have some condition other than nerve trouble.—*Guildcraft*, December, 1954.

Licensing of Maternity Units in Michigan

By Albert E. Heustis, M.D., M.P.H.
Commissioner, Michigan Department of Health
Lansing, Michigan

THE MICHIGAN Department of Health has worked closely with the Michigan State Medical Society throughout the years in making a concerted effort to assure the highest possible quality of medical and hospital care for Michigan's mothers and infants.

In April, 1926, was begun one of the first maternal mortality studies in the United States under the leadership of Lillian R. Smith, M.D., then director of the State Health Department's Maternal and Child Health Program, with the co-operation of the Detroit City Health Department and the approval of the Michigan State Medical Society. During the study close contact was maintained between the Michigan State Medical Society and the Michigan Department of Health, and the need for maternity consultation services to physicians and hospitals was pointed up. The Michigan State Medical Society appointed Dr. Alexander Campbell as a special advisor on maternal health to the Michigan Department of Health in the middle thirties. On February 2, 1939, he joined the staff as a full-time obstetrical consultant. In addition to Dr. Campbell, Dr. Clair Folsome and Dr. Russell deAlvarez served as obstetrical consultants on the staff of the Michigan Department of Health. These men visited hospitals and other institutions where maternity care was given and discussed with medical staffs and administrators improvements in practices and facilities.

The Department placed more and more emphasis on this phase of the program. Nursing consultants were added to the staff and manuals on maternity and newborn care were prepared with the help of practicing physicians, hospital administrators and others.

During these years, the responsibility for the licensing of maternity hospitals rested with the Department of Social Welfare. On September 28, 1951, the Legislature transferred this responsibility to the State Health Commissioner.

In addition to this legislation passed in 1951, the State Health Commissioner, by virtue of an act passed in 1953, was given other specific legal responsibilities concerning hospitals; namely, the making of rules and regulations to protect the public health; the establishment of minimum standards of maintenance and operation for hospitals built with federal funds; and the certification of all hospitals to the Department of Social Welfare.

At the 1954 session of the Michigan Legislature, in order to clarify questions of constitutionality, the Legislature considered and passed Public Act No. 83 which amended the basic public health law by incorporating in it the material briefly contained in the Welfare Department Appropriation Act. Thus the new law is substantially the same as the old except that the Legislature added the word "enforce" and called upon the State Health Commissioner to define a hospital. *The new law exempted, as did the previous one, the regulation of medical personnel within hospitals* and also exempted all hospitals already responsible to any other standard-setting and standard-maintaining authority of the state. The new law also limited action which could be taken, as did the previous one, to that which was necessary to bring about conformity with the requirements of the federal government. This new law supplements the responsibilities already given for the regulation of maternity hospitals and maternity homes.

In the discharge of our responsibilities concerning hospitals, several steps are noteworthy.

First, a basic philosophy was adopted that the Michigan Department of Health should do more than point out what was wrong or what might be improved in hospitals. Our job, as we see it, is to provide advice and consultation upon how to meet the requirements and to meet them efficiently and economically, as well as practically.

Second, we sought the active cooperation of hospital people themselves and of the members of the Maternal Health Committee of the State Medical Society. We plan to ask the active cooperation of the Joint Commission on Accreditation. We shall endeavor to secure advice and suggestions as to how our procedure might be improved and as to how hospitals might be made even safer places for patient care.

Third, we undertook to interpret the Rules and Minimum Standards with fairness, justness and

(Continued on Page 178)

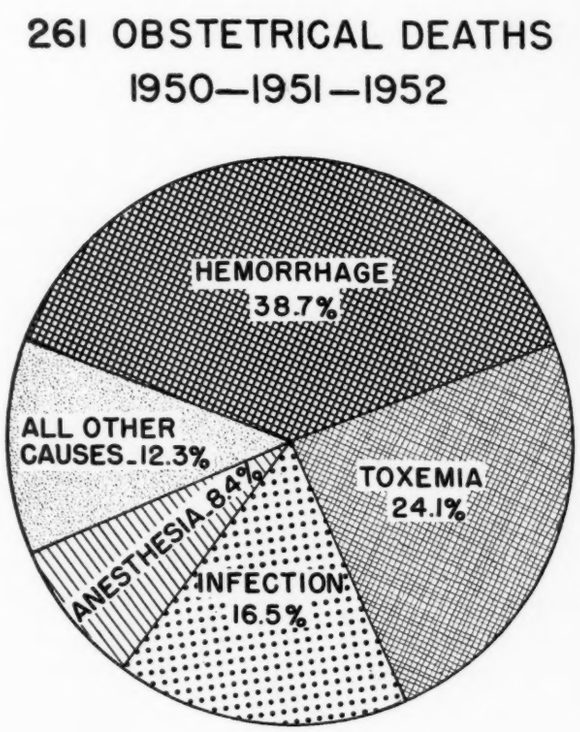
Michigan Maternal Mortality Study 1950-1952

By Margaret S. Hersey, M.D.
Kalamazoo, Michigan
and
Palmer E. Sutton, M.D.
Royal Oak, Michigan

MATERNAL MORTALITY still offers a distinct challenge to the patient, to the physician and to the maternity unit administrator. A study of the records, both a generation ago and currently, gives evidence of our phenomenal improvement but also indicates where present defection exists. While in general Michigan's record parallels the national trend, our position of twelfth place among the states should cause us to lose any degree of smug complacency which may have overtaken us.

In presenting this preliminary report of the current study begun in 1950, the committee has utilized the talents of many and attempted to reflect current thinking and methods. Mechanism at the state level is difficult and publication of observations lags as compared with the large county or city surveys. Summarization of the multitude of minutia is insurmountable. This does not prevent the reporting of broad conclusions. It has been noted for some time that reviews based on observations from death certificates are utterly fallacious. Previous definition of a maternal mortality, which includes a nine-month postpartum period, has been abandoned in favor of a ninety-day postpartum period. Attempts at evaluating preventability is currently thought to be useful and further to charge responsibility to patient or to physician or hospital or combinations of these. In this attempt, the ideal is projected as something that can be accomplished in comparison to actual circumstances. Therefore, the standard for evaluating preventability is high but in a sense justifiable. Our attempts at assigning causes of death is undoubtedly subject to error. The error is shared, however, by the members of the publication committee, by the members of the evaluation committee, by the regional visiting obstetrician and by our consultant members in Cardiology, Anesthesiology and Pathology.

We have attempted to abandon the use of the previously accepted term "non-maternal death."



Graph 1.

We propose as definition, therefore, a maternal death as one occurring in a woman who is pregnant or within ninety days post-partum. We have further attempted to divide maternal deaths according to causes of death as due to obstetrical or non-obstetrical causes. Therefore, the true maternal mortalities, as reported, are those due to obstetrical causes. If this suggested change is acceptable, it does accomplish emphasis on causative factors. We believe the previously used term of non-maternal death as referred to a death of a woman who is pregnant is an ill-use of language and probably results from an abbreviation or inferred elimination of the word cause. When "non-maternal cause of death" is used it has the same meaning as maternal death due to non-obstetrical causes.

A total of 382 maternal deaths occurred during the first three years of our study. Of these, 261 were considered to be deaths due to obstetrical causes and 121 deaths have been classified as deaths from non-obstetrical causes. For comparative purposes the committee has followed the usual

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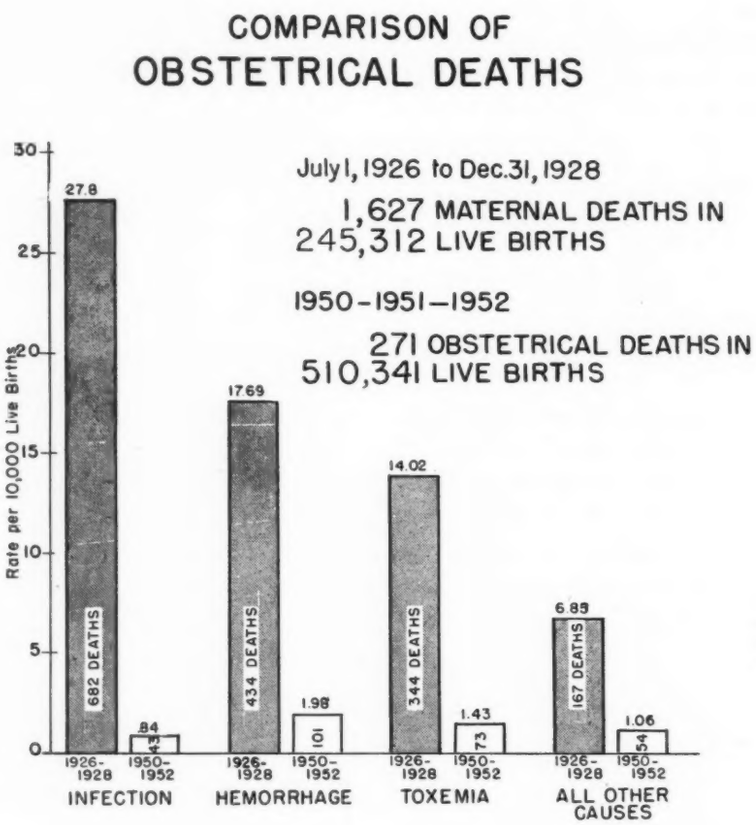
TABLE I. MICHIGAN MATERNAL MORTALITY STUDY
1950-1952
382 Deaths

Category	Obstetrical Causes	Non-Obstetrical Causes	Total
I. Hemorrhage	101	0	101
II. Infection	43	32	75
III. Toxemia	63	10	73
IV. Heart disease	0	28	28
V. Anesthesia	22	0	22
VI. All other causes	32	51	83
Total	261	121	382

TABLE II. MATERNAL MORTALITY RATE

	1950		1951		1952	
	Deaths	Rate Per 1000 Live Births	Deaths	Rate Per 1000 Live Births	Deaths	Rate Per 1000 Live Births
Maternal mortality study	84	0.52	89	0.52	88	0.51
Michigan department health published figures	91	0.57	94	0.54	82	0.46



custom of classifying maternal deaths into the four main categories of hemorrhage, infection, "toxemia," and all other causes. The two additional categories of heart disease and anesthesia are proposed because of the high incidence as shown in our survey. The deaths from anesthesia were included in the group of obstetrical causes because anesthesia is an integral part of obstetrical management. Heart disease is classified as a non-obstetric death because it is a pre-existing medical entity.

Table I presents the numbers of deaths occurring in the six general categories and Graph 1 presents the percentage distribution of the obstetrical deaths. The deaths are categorized according to the factor which we believe is responsible for the death. Therefore, the following figures do not indicate the total number of cases with a given disease entity. For example, seventy-three deaths are attributed to toxemia, but thirty-two additional patients with a background of hypertension, albuminuria, and/or edema, are included under hemorrhage, anesthesia, infection, et cetera, where this has been the terminal cause of death.

The fetal salvage in these 382 pregnancies is low. Ninety-nine of the 261 pregnancies in the obstetrical group terminated with living infants,

(Continued on Page 200)

Michigan Maternal Mortality Study 1950-1952

Category I. Hemorrhage—The Principal Cause of Maternal Deaths

By Harold W. Longyear, M.D.

Royal Oak, Michigan

IN MICHIGAN, as in other states, hemorrhage is the most frequent cause of maternal death. All are aware of its hazards. Despite the almost universal availability of blood for transfusion, deaths due to hemorrhage remain disconcertingly static. It is all to evident that the red tide has not ebbed. Unlike other complications, hemorrhage does not allow time to conjecture about its cause or to deliberate its management. Success here depends upon prompt, adequate therapy. Too little and too late, are reflected too often in failure. Best results are obtained when hemorrhage is anticipated, when blood is available for use should it occur. When hemorrhage is encountered unexpectedly, the volume of blood lost must be appraised rapidly and replacement begun while the cause of the bleeding is searched out and corrected. Blood substitutes and plasma expanders can be used to bridge the gap until blood is available. There is no substitute for blood in the treatment of hemorrhage. Massive hemorrhage is terrifying. The situation usually is desperate. Yet management requires clear and concise thinking. Dr. Norman Miller stated it well, "The true measure of an obstetrician in trouble is the number of steps backwards he is able to take successfully." As in the military, a successful retreat is orderly and well planned. Headlong rout invariably ends in disaster.

During the first three years of the current survey of maternal deaths in Michigan, hemorrhage was found responsible for 101 (38.7 per cent) of all deaths due to obstetrical causes. Hemorrhage also contributed significantly to the death of many patients classified under other categories, such as toxemia, infection, and cardiovascular-renal disease.

The importance of hemorrhage as a complication is emphasized further by the large percentage of preventability and physician responsibility which exists. Improved management of this complication will lower the maternal death rate materially and bring the minimum of maternal deaths closer to realization.

TABLE I. DEATHS DUE TO HEMORRHAGE
Tabulation by International Classification

International Classification		No.	Percent
643	Associated with placenta previa	11	10.8%
644	Associated with placental abruption (33% associated with hypertension)	13	12.8%
645	Associated with ruptured ectopic pregnancy	21	20.7%
650	Associated with incomplete abortion	3	2.9%
671	Associated with retained secundines	3	2.9%
	Associated with placenta accreta	3	2.9%
672	Associated with post partum hemorrhage ? Atony	20	19.8%
677	Associated with perforation, laceration, pelvic organs	26	25.7%
	Associated with post partum inversion uterus	1	.99%
	Total	101	

TABLE II. DEATHS DUE TO HEMORRHAGE
Tabulation by Years

Cause	1950	1951	1952	Total
Rupture or laceration birth canal	7	9	10	26
Ruptured ectopic pregnancy	10	7	4	21
Post partum hemorrhage (? atony)	6	8	6	20
Premature separation placenta	7	3	3	13
Placenta praevia	6	3	2	11
Placenta accreta	1	0	2	3
Retained secundines	0	1	2	3
Incomplete abortion	0	3	0	3
Inversion of uterus	1	0	0	1
Total	38	34	29	101

A brief review of the major causes of deaths due to hemorrhage during this three-year period (Table I and Table II) may focus the problem directly and permit certain specific recommendations.

Ectopic pregnancy was responsible for twenty-one (20.7 per cent) of the deaths due to hemorrhage. The chief signs and symptoms (Table III) were missed period, vaginal spotting and abdominal pain.

TABLE III. ECTOPIC PREGNANCY

Signs and Symptoms	*Incidence*
Missed Period	36%
Vaginal Spotting	50%
Abdominal Pain	60%

A proper diagnosis was made in but 14 per cent of cases. The major error in diagnosis was the treatment of subjective symptoms, overlooking the possibility of ectopic pregnancy, this error resulting from incomplete or inadequate examination of the patient, and avoidance of pelvic examination for fear of contributing to a supposed impending abortion.

Always be ectopic minded. Complete examina-

tion is essential. Once the diagnosis is established or a suspicion of an ectopic pregnancy exists, the patient must be hospitalized at once. Hemograms should be obtained as well as blood secured for transfusion. Examination under anesthesia with cul-de-sac aspiration usually will clinch the diagnosis. If doubt persists, colpotomy with direct visualization of the tubes and ovaries should be done. In its absence, or with uncertain findings, laporotomy is indicated.

Treatment of ruptured tubal pregnancy is surgical. Most patients with ruptured tubal pregnancy will die unless operated upon. It is better to operate and be wrong about the diagnosis than to allow a patient to die because surgery was not done.

Bleeding caused by low implantation of the placenta was responsible for 10.8 per cent of the deaths due to hemorrhage. Recurrent episodes of scant vaginal bleeding preceded significant hemorrhage in three-quarters of the cases. These preliminary episodes generally were regarded as unimportant and ignored. Attempts at diagnosis were not made until after significant bleeding had occurred. Even then, almost two-thirds of the patients received no special diagnostic examination. Only one out of five were examined vaginally. Half of these had placentography.

Fortunately, primary hemorrhage in placenta praevia is rarely fatal. Its occurrence is an adequate warning of impending trouble. A search must be made to discover its cause. When bleeding is minimal and the patient in good condition, blood may be secured and placed in reserve while x-ray studies are made to visualize the placental site. Soft tissue techniques for visualization are usually satisfactory. When significant bleeding occurs, or when continuous bleeding persists, blood transfusion should be started and, with the operating room prepared for immediate surgery, a vaginal examination done.

Proper treatment must consider four factors: (1) the degree of encroachment of the placenta onto the cervical portion of the uterus, (2) the volume of bleeding, (3) the state of the cervix, and, (4) the condition of the mother and baby. Ample blood should be given to support both the mother and the infant. Delivery is to be done by the most conservative method possible. In these deaths both extremes of treatment were used. Forty-five per cent of the patients died undelivered, while 27 per cent were delivered by version and extraction. Simple outlet forceps and cesarean section were used in the remainder. Manual dilatation of the cervix and version and extraction of the baby is extremely hazardous in placenta praevia. In the cases studied, better diagnosis would have directed safer operative measures. In most cases blood replacement was inadequate. One third of the patients were not transfused at all.

Premature separation of the normally implanted placenta was held responsible for 12.8 per cent of the deaths due to hemorrhage. Associated hypertension was present in one-third of these cases which may be significant in producing the abruption. The grave prognosis for patients with hypertension is reflected in the number who die from hemorrhage and toxemia.

Vaginal bleeding was present in two-thirds of these cases with premature separation of the placenta. Abdominal pain and uterine tenderness were present in one-half. The appearance of these signs and symptoms most usually were sudden and dramatic. History and abdominal palpation alone made the diagnosis in 25 per cent of these cases. Vaginal examination was done in 50 per cent, and in 25 per cent additional information was secured by placentography. One-half of the patients were delivered by cesarean section, 8 per cent of which were cesarean-hysterectomies, done because of extensive hemorrhage into the uterine musculature. One out of eight died undelivered. One-third were delivered by version and extraction, by intrauterine bag, or by Duhrssen's incisions of cervix and mid-forceps. Traumatic vaginal deliveries were poorly tolerated and frequently caused additional massive bleeding. Because of the tetanic state of the uterus, intrauterine manipulation was difficult.

There are three fundamentals in the proper management of this complication: (1) treatment of shock, (2) adequate blood replacement, and (3) delivery by the most conservative method possible. The condition of the patient and state of the cervix usually dictates the procedure to be chosen. Inadequate blood transfusion, particularly prior to delivery, was responsible for most fatalities. Less than two-thirds of the patients received blood by transfusion. Although no instance of defibrinization was noted in these cases, the increased likelihood of coagulation defects with placental abruption emphasizes the necessity of careful fibrinogen determinations in each case whenever possible.

Likewise postpartum urinary output should be watched carefully. If oliguria is present, the administration of fluids must be restricted. In this group, two patients died because of unlimited fluid administration in the presence of oliguria.

Rupture or laceration of the birth canal was the most frequent cause of fatal hemorrhage, being responsible for more than one-quarter of the deaths. Many others undoubtedly would have been added to this impressive total had the cause of bleeding been determined in those deaths ascribed to uterine atony.

Uterine rupture occurred in approximately two-thirds of the cases. Almost half of these resulted from oxytocic stimulation. In one-third of the cases pitocin was used to induce labor; it was used to stimulate uterine contractions in the remainder. In one instance it was given in an attempt to expel a retained placenta. Autopsy showed the placenta attached in the interstitial portion of the tube. The entire cornua of the uterus was blown out, an evident result of an excessive dosage of pitocin. In an amazingly large number of cases, pitocin had been used in an attempt to overcome dystocia without adequate re-evaluation of the problem. In some instances it was used to try to force the infant through the pelvis after forceps and other attempts at delivery had failed.

Pitocin is to be used as a uterine stimulant only after careful review of the pelvis reveals no obstruction, disproportion, or malposition. At times x-ray studies are necessary. When no contraindications are present, small amounts of dilute solution may be given if the resultant contractions are carefully observed by the physician himself. Pitocin stimulation in prolonged labor must be done with extreme caution. It must not be attempted until the total problem has been carefully reappraised and the patient properly prepared for continued labor.

Trauma from operative delivery was the next frequent cause of uterine rupture. Version and extraction were most lethal. Oftentimes it was done in desperation after other methods had failed. Invariably it ended in disaster. Present concepts of good obstetrical practice do not insist upon completion by vaginal delivery once it is started. At times it is wiser to admit defeat and to resort to abdominal delivery than to persist and cause irreparable damage to both mother and infant. In several instances rupture occurred after manual removal of the placenta. Any invasion of the uterine cavity demands careful examination for possible rupture or laceration of its walls. The possibility of ruptured uterus was not suspected in two-thirds of the cases. In only slightly more than one in ten was the diagnosis established before laporotomy. In many, all of the classic signs of uterine rupture—pain, shock, and cessation of labor—were present and unrecognized. In others, significant bleeding with or without shock was present. In all, incomplete examination was responsible for the missed diagnosis. Treatment, once the diagnosis was established, for the most part was good, although more prompt use of larger amounts of blood might have prevented operative fatalities. In general, only one-third of these patients were operated, and only half received any blood at all.

Laceration of the birth canal caused nine deaths. Almost all were due to the trauma of operative deliveries. Version and extraction and mid-forcep deliveries each accounted for one-third of the fatal lacerations. Oftentimes the operative delivery followed prolonged labor, during which the patient was inadequately managed. Operative indications frequently appeared to be no more than the desire to terminate a tenuous labor. Two fatalities followed simple outlet forcep deliveries because small vault lacerations were unrecognized and unrepaired. Slow, continuous bleeding can be as fatal as sudden massive hemorrhage.

Twenty deaths, or 19.8 per cent of the hemorrhage group, were attributed to uterine atony. Complete examination of the vagina, cervix and uterus to exclude other causes of bleeding was done in only one-fourth of the cases. In the others, atony was diagnosed on presumptive evidence alone. Management was similarly inadequate. Only two patients received adequate amounts of oxytocic, including pitocin by intravenous drip. Almost half were transfused, but only one-fourth received adequate amounts of blood. Fibrinogen levels were not determined, and two patients died following hysterectomy because of continued bleeding.

Uterine atony is to be diagnosed only after the exclusion of all other causes of postpartum hemorrhage. The vagina and cervix must be thoroughly inspected and the uterine cavity examined carefully for evidence of laceration, rupture, inversion, or retention of placental tissue. Anything which impairs uterine contractility predisposes toward uterine atony. Overdistention from multiple pregnancy, large baby, or hydramnios may lead to

atony as may muscle fatigue following obstetrical trauma or prolonged labor. Multiparity, tumors, and infections are other common predisposing causes. Because of the frequent association of postpartum hemorrhage with these conditions, their existence calls for preparations in advance to treat the hemorrhage should it occur. Prolonged labor existed in almost one-quarter of these cases. Not only was there a failure to have compatible blood at hand, but oftentimes the patient was not rested or given adequate fluids during this trying period. Resultant exhaustion contributed greatly to subsequent atony and fatal hemorrhage. Almost half of these patients were delivered by forceps or other operative procedures. Operative delivery generally requires more anesthesia, which, in conjunction with trauma, further reduced the contractile power of the uterus. The resulting hemorrhage was profuse, and was followed rapidly by shock. Prompt and adequate treatment of shock is mandatory. Blood pressure must be maintained and blood given in generous quantities while the cause of bleeding is being searched out and corrected. When atony is proven, continuous intravenous infusions of pitocin are to be started and the uterus gently held free of the pelvis. Vigorous massage of the uterus contributes little to its contractile ability and should be avoided. Uterine packs may be used in critical situations, but only as a temporary measure. The pack should be removed after the crisis has passed and uterus again observed for adequate contractility. Continued reliance on a pack is unwarranted because prodigious amounts of blood may be unsuspectedly absorbed or siphoned through the pack. If bleeding continues despite these measures, hysterectomy occasionally may be indicated. Fibrinogen levels should always be determined. If depletion has occurred, this should be corrected with adequate amounts of fibrinogen. Six to twelve grams of fibrinogen may be required for adequate replacement.

From the study of these 101 maternal deaths, cardinal principles for the management of hemorrhage may be summarized as follows:

1. Deaths due to hemorrhage are largely preventable.
2. Correction of anemia during the prenatal period enables the patient to withstand hemorrhage better.
3. Supportive treatment during labor, with adequate rest and fluids is essential.
4. Oxytocic drugs used to induce or stimulate labor are to be given in small dosage, with great caution, and only after all contraindications have been ruled out.
5. Anticipate hemorrhage and have blood available for use. Tranfuse early with adequate amounts of blood.
6. Treat shock promptly. Maintain adequate blood pressure. Plasma expanders may be used temporarily while blood is secured. Gelatin 6 per cent has few side effects and a wide range of safety.
7. Search out the cause of the bleeding. Correct it simultaneously with blood replacement.
8. Traumatic vaginal deliveries should be avoided.
9. Delivery always should be by the most conservative method possible.
10. Be ectopic minded.

FEDERAL STUDY OF MEDICAL CARE PAID BY INSURANCE

A Social Security Administration study of voluntary health insurance in 1953 discloses about 20 per cent of all medical care costs were paid by health plans. The study, which is part of a more extensive survey covering 1948-53 published by the agency, estimates the 1953 private medical bill at $9,866,000,000 and payments for benefits at $1,919,200,000. Other statistics: (1) expenditures for hospital services alone were covered to the extent of 41.4 per cent, and physicians' services alone were covered to the extent of 20.7 per cent; (2) physicians' bills accounted for less than a third (28.6 per cent) of all private medical costs, while hospital bills made up 29 per cent; medicines and appliances, 22 per cent; dentists' fees, 9.6 per cent; other professional services, 5.7 per cent; and health insurance, 4.9 per cent.

Michigan Maternal Mortality Study 1950-1952

Category II. Infection

By Howard R. Williams, M.D.
Ann Arbor, Michigan

INCIDENCE OF deaths due to infection has decreased more than any other causative category due to the availability of good antibiotics. However, death due to infection occurs all too frequently when casual reliance on drugs replaces careful diagnostic procedure and definitive treatment. Shotgun methods are inadequate and constitute poor medical treatment. During the current three-year survey, seventy-five deaths, a percentage of 19.6, were due to infection. Forty-three were related to obstetrical causes, and thirty-two to non-obstetrical causes (Table I). Puerperal infection, which includes deaths due to septicemia, peritonitis, pneumonia, hepatitis, and mastitis account for the largest number. Seventeen deaths (39 per cent) were due to obstetric causes. Abortions account for eleven cases (26 per cent), and thrombophlebitis leading to embolism, fifteen cases (35 per cent).

It is in the group of *puerperal infection* that we have the best possible opportunity for a constructive program. Modern antibiotic treatment has resulted in the salvage of many uteri which formerly were sacrificed through hysterectomy when cesarean section became necessary in infected cases. In our current series, 76 per cent of puerperal infection deaths followed cesarean section. Of this group, eight patients had been in labor more than twenty-four hours. Prior to section, prophylactic antibiotics were not generally utilized and postoperative treatment was inadequate. Even modern drugs cannot overcome omission and delay in management. Heroic treatment in a moribund patient is of no avail. Prolonged labors were a very important factor in many of these puerperal infections. Proper management of prolonged labor includes careful obstetrical review of the patient to determine the cause of dystocia, adequate rests, fluids, and prevention of infection. Such cases, if not properly supported, are fertile ground for puerperal infection. In four of these cases, unrecognized obstruction of the birth canal existed. Three of these were finally delivered by cesarean section, and resultant peritonitis caused death. In the fourth, though an existing cyst was present, delivery from below was accomplished. However, after delivery, the patient developed peritonitis, pelvic abscess, and eventually death. Ovarian cysts, complicating pregnancy, may be ruptured during labor or delivery, or may rupture postpartum as a result of trauma. Induction of labor, while considered a safe procedure in some cases, was responsible for two of our deaths. In one of these two, the labor was desultory. Several attempts at vaginal delivery failed, and subsequent attempt at craniotomy was also unsuccessful. The patient developed a high fever, was sectioned, and died. In the other case, induction by artificial rupture of the membranes was followed by irregular fetal heart rate, and section was carried out.

TABLE I. MATERNAL DEATHS DUE TO INFECTION
75 Cases

Int'l Class		Obstetric Causes	Fetal Salvage	Non-Obstetric Causes	Fetal Salvage
002	Tuberculosis pulmonary			1	0
010	Tuberculosis meningitis			1	0
057.1	Meningococcemia			1	1
080	Poliomyelitis			12	1
092	Infectious hepatitis	1	0	5	1
340.3	Acute lepto meningitis			1	1
364	Guilliam barre syndrome			1	0
491	Pneumonia	2	1	6	2 twins
550.1	Appendicitis			2	0
651.2	Abortion (induced)	9	0		
651.3	Abortion (spontaneous)	2	0		
681	Peritonitis and septicemia	13	8	2	0
682	Thrombophlebitis and				
684	Embolism	15	14		
689	Mastitis	1	1		
	Totals	43	24	32	6

Phlebitis and *Embolism.*—This is the second largest group and comprises 20 per cent of all of the infections. The records indicate several patients were discharged from the hospital following a febrile reaction approaching normal, only to die of an embolism several hours or days later. Many of these patients received antibiotics without a definite diagnosis of thrombophlebitis. Some embolic deaths showed on postmortem examination a totally unsuspected pelvic phlebitis. Positive diagnosis and definitive treatment are a must, and indiscriminate use of any antibiotic must be condemned as mismanagement.

Abortion.—The subject of abortion is discussed under several different categories of this survey. Of the 382 maternal deaths, twenty-four (6 per

TABLE II. MATERNAL DEATHS DUE TO ABORTIONS

Category	Spontaneous	Induced		Total
		Induced for Other Than Medical Reasons	Therapeutic	
I	3	1		4
II	2	9		11
III	1		1	2
IV	1			1
VI		6		6
Totals	7	16	1	24

cent) are associated with abortion of some kind. Table II shows the distribution of the abortions among the six categories. Infection has the dubious privilege of leading the list.

This small number of deaths due to abortion probably does not show the complete picture because we believe many of these individuals do not come under medical care and consequently the true cause of death is not ascertained. However, largely because of antibiotic treatment, a considerable reduction in the number of deaths is noted. This is very dramatically shown in a comparison of the figures of the 1926-1928 series and the present series. With twice as many deliveries, the actual deaths compare as 345 to eleven, a factor of sixty-five times as many deaths from infection in the first series as in the second. These drugs have made it possible to initiate active treatment which has not only saved many lives, but has prevented subsequent pelvic inflammatory disease in untold numbers.

Further improvement can be expected only when public education creates an awareness of the inherent dangers of induced abortion. Of the twenty-four abortions noted in this survey, sixteen (67 per cent) were induced for other than medical purposes. These definitely were a responsibility of the patients themselves. Often fatalities result because the patient is unwilling to tell of an induced abortion even after danger signals are present and denies herself the advantages of proper medical treatment.

Deaths from abortion associated with infection can be reduced by continued education of lay and professional people.

Non-obstetric Causes of Death Due to Infection. —Poliomyelitis ranges highest with twelve cases. Interestingly enough, nine of the twelve were in the year of 1952. Tabulated, they are:

Poliomyelitis ..... 12 cases
Pneumonia ..... 6 cases
Infectious Hepatitis ..... 5 cases
Peritonitis ..... 4 cases
Neurological Complications ..... 3 cases
  Acute Meningitis
  Meningogoccemia (Epidemic)
  Guillian Barre Syndrome
Tuberculosis ..... 2 cases

This group comprises patients whose deaths were due to infection not related to pregnancy. The pregnancy was really incidental. This, however, is subject to discussion because of different interpretations as to cause and effect. Two of the four peritonitis cases listed above are a result of appendicitis with perforation. It is a well-known fact that appendicitis in pregnancy, like many other diseases associated with pregnancy, carries a much higher mortality. For this reason, certain investigators would like to call these obstetric deaths. These two patients were not neglected. Both were too sick to withstand an operation. One of the patients with pneumonia was undoubtedly much worse because of her delivery but she was admitted primarily as a pneumonia patient and died of her pneumonia. The pregnancy was merely coincidental.

Conclusion

Reduction of maternal mortality in the future may come from the continued education of physicians in the proper use of our newer antibiotics as well as disciplines which will result in improved judgment when operative procedures are contemplated. The non-obstetric deaths will continue until the associated diseases have been brought under control and this death rate will mirror our success in the treatment of general disease. Education of the public, particularly in the importance of prenatal care as well as the serious consequence of induced abortion, is also a part of this program for reduction in the deaths due to infection in our pregnant patients.

Michigan Maternal Mortality Study 1950-1952

Category III. Toxemia

By Palmer E. Sutton, M.D.
Royal Oak, Michigan

THE CASES in this category have in common hypertension, albuminuria and edema, with or without convulsions. Historically, up to a little over a century ago, the only differentiation made was between epilepsy and convulsions associated with pregnancy. The discovery of proteinuria in association with convulsions was noted for the first time 110 years ago and the mechanisms to record blood pressure approximately sixty years ago. It follows, therefore, that for many decades before the sphygmomanometer, eclampsia was considered a form of Bright's disease. In the early decades of this century it became gradually recognized that hypertension preceded the "convulsions of pregnancy" and the concept of pre-eclampsia was born. Still more recently many pregnant women were noted to have hypertension before, during and after pregnancy, thus another symptom complex, essential hypertension, of unknown etiology is included in this category. More recently many observers believe that in the women with essential hypertension the superimposition of pre-eclampsia is common, at least more common than in the patients without essential hypertension, and incidentally more hazardous than either essential hypertension or pre-eclampsia alone. We are confronted therefore with a group of "clinical entities" which present a bewildering mass of phenomena in human physiology and pathology which even today is incompletely understood.

In recent decades the popular designation "toxemias of pregnancy" has been used to include all of these various "entities." As we advance in our knowledge and learn to differentiate nephritis, essential hypertension, pre-eclampsia, eclampsia and combinations such as essential hypertension with superimposed pre-eclampsia, we improve the management of the given patient. Since by common usage the term "toxemias of pregnancy" is retained to designate this group before differentiation, it should be stated that no proof exists that nephritis or essential hypertension is a "toxemia." Further, the category, by common consent, no longer contains hyperemesis gravidarum as the vomiting bears no relationship to the hypertensive disorders of pregnancy. Likewise, the formerly included designation of acute yellow atrophy of the liver is dropped as it presently is considered to be infectious hepatitis. We are left, therefore, with pre-eclampsia and eclampsia as the only "true toxemias." If one further adopts the concept that pre-eclampsia and eclampsia occur only in association with pregnancy, the other conditions are to be considered as "medical entities" pre-existing or concomitantly occurring and remaining in existence following the termination of the pregnancy.

TABLE I. MATERNAL DEATHS DUE TO TOXEMIA

International Classification	Causes	No. Deaths
	Non-Obstetrical	
VII	Diseases of the Circulatory System	
	444—Essential Hypertension	3
X	Diseases of Genito-Urinary Tract	
	590—Acute Nephritis	6
	591—Nephritis including Nephrosis	
	592—Chronic Nephritis	
	600—Pyelonephritis	1
	7	10
	Obstetrical	
VII + XI	444—Essential Hypertension with Superimposed 642.2 Pre-eclampsia or 642.3 Eclampsia	8
XI	642.2 Pre-eclampsia	18
XI	642.3 Eclampsia	37
	63	
	Total	73
	Cases with background of Hypertension and/or Edema and/or Albuminuria removed to other categories	32
	Hemorrhage 11	
	Infection 5	
	Heart Disease 4	
	Anesthesia	
	Incompatible Blood 8	
	Miscellaneous 4	
	32	
	Total	105

In Michigan the only other known study of maternal deaths was made over a two and one-half year period in 1926-27-28. This category was then designated according to the International Classification of Diseases as puerperal albuminuria and convulsions. We can find no evidence that differentiation as indicated above was made.

In our present three-year period, 1950 to 1952, we have included in Category III, by custom, seventy-three cases having hypertension, albuminuria, and/or edema with or without convulsions who died of this complication *per se*. There are,

TABLE II. MODES OF DEATH IN TOXEMIA GROUP

	Renal	Cardiac and Renal	Abruptio and Renal	Cardiac	Coronary Occlusion	Cerebral Hemorrhage	Total
Nephritis	7						7
Essential hypertension		1		1	1		3
Essential hypertension + superimposed toxemia	3			3		2	8
Pre-eclampsia	4		4	5		5	18
Eclampsia	7	3	1	23		3	37
Total	21	4	5	32	1	10	73

however, thirty-two additional deaths removed to other categories whose original "background complication" relates them definitely to this group but whose mode of death—by hemorrhage or infection or anesthetic misfortune or incompatible blood or other miscellaneous reasons—swells the numbers of these other categories and depletes this one. Thus Category III loses eleven cases to hemorrhage, five to infection, four to heart disease, eight to anesthesia and incompatible blood and four to miscellaneous. (Table I.)

Comparison of the number of deaths, seventy-three, due to "toxemia" in the present three-year period when there were 510,341 live births, with a generation ago in a two and one-half-year period when there were 344 deaths due to toxemia among 245,312 live births, is gratifying.

Nephritis—Essential Hypertension

In the present study we include ten cases which, according to the information on the charts, indicated that seven patients or approximately 10 per cent of the group exhibited evidence of nephritis when first seen or before the fifth month and the progress of events was entirely one of renal failure. These women were seen prenatally and it would appear that the attendants were unable to appreciate the significance of the findings of albuminuria, hypertension and edema in the first trimester. Evaluation and consultation with an internist to obtain the possible benefit and sharing of the responsibility of caring for such a patient would seem to be indicated. The other three of this non-obstetric group had essential hypertension of years standing. They were over thirty-five years of age and died of cardiac and renal failure, two in association with severe anemia, one in association with obesity and sudden death. Possibly they belong more properly in the cardiac group. When the individual with essential hypertension is in the younger age group, she can generally be managed well while pregnant if attention is given to rest, nutrition, control of weight gain, prevention of anemia and the limitation of sodium intake without creating any apparent permanent damage or increased elevation of blood pressure if she is fortunate enough not to develop superimposed pre-eclampsia. The individual with essential hypertension, however, is ten times more liable to develop pre-eclampsia than her non-hypertensive sister and the hazard is equally increased. Evaluation, therefore, in nephritis and essential hypertension must be early and strict. It should include accurate estimation of cardiac and renal function, diligent and frequent observation to detect superimposed pre-eclampsia, frequent observation of the fundus oculi, preferably by an ophthalmologist. The establishment of the diagnosis of nephritis in early pregnancy, or of long-standing hypertension with diminished cardiac or renal function, or of essential hypertension with superimposed toxemia, is of grave import. These complications are among the leading indications for interruption or termination of pregnancy.

Incidence of Pre-eclampsia and Eclampsia

Even the approximate incidence of toxemia occurring among the total number of pregnancies is difficult to ascertain.

Dieckman's "The Toxemias of Pregnancy" (page 36, Table 4) shows the incidence range in United States for eclampsia is .012 per cent in Oregon for low to 2.82 per cent in North Carolina for high, and for pre-eclampsia is .53 in New Mexico for low to 25.0 per cent in North Carolina for high. The combined averages would give a calculated incidence of 14.14 per cent for entire U. S. for both eclampsia and pre-eclampsia. In Michigan only very rough estimates can be calculated. In the 1937-1940 era the combined incidence, according to Dieckman, was 3.82 per cent in Michigan. If the incidence has remained the same for the present 1950-1952 era, which

seems unlikely and probably high, we might estimate that approximately 19,000 women could have had pre-eclampsia or eclampsia (3.82 per cent x 510,000 live births for three years) in 1950 through 1952. With seventy-three deaths the incidence of death would be 0.37 per cent within the category.

Since we have no way of estimating the total incidence of hemorrhage or infection or heart disease, et cetera, in relation to the deaths in each category, we cannot estimate whether we do better or worse incidence-wise comparing the various categories. In many private practice series it is estimated the incidence of toxemia is between one per cent to three per cent without mortality for periods of ten to twenty years including approximately 8,000 to 12,000 pregnancies.

Hypertension with Superimposed Toxemia—Eight Cases

Two patients sought no prenatal care and a third received insufficient attention, therefore, three of eight had none or poor prenatal care. One was moribund when first seen, one sought care when abruptio occurred and was in extreme difficulty with hypertension + toxemia + chronic anemia + abruptio before Rx. In the other five in this group, prenatal care was not up to standard since chronic hypertension with the additional findings of albuminuria and progressive "toxemia" was recorded, the evaluation was tardy, early consultation was absent and the appreciation of the seriousness did not occur until the patient was in an irreversible state. The mode of death in these eight cases is tabulated in Table II. Fetal salvage in eight cases with one set of twins was one baby (12 per cent).

Pre-eclampsia and Eclampsia

Combining the two groups of pre-eclampsia and eclampsia there are fifty-five cases to be considered. Two died out of state, leaving fifty-three with information for analysis.

Prenatal Care. Seven pre-eclamptics plus twelve eclamptics received no prenatal care or sketchy, scant, inadequate care. Patient responsibility in nineteen instances is 36 per cent of the total. In this group four babies lived.

In the group seeking prenatal care (thirty-four cases) approximately ten might be judged to be non-preventable by average standards (18 per cent). The remainder, approximately 46 per cent (twenty-four cases) present evidences from the record that adequacy and good understanding and prompt evaluation of the problem were lacking. There were instances of untreated anemia, prolonged home treatment one to four weeks with no improvement in albuminuria and hypertension before hospitalization or before convulsions or abruptio or both ensued. The presence of twins, polyhydramnios and pre-eclampsia was not viewed with astute acumen.

In the pre-eclamptic group of eighteen cases the fetal salvage was eleven babies (61 per cent). In the eclamptic group of thirty-five cases the fetal salvage was eighteen living babies including four sets of twins (51 per cent). Combined there were twenty-nine living babies in fifty-three pregnancies (54.7 per cent).

Ideally speaking, even though exact etiology is not known, prevention in this group is the aim. This includes *patient* and *professional acceptance of responsibility* to scrutinize all alterations or departures from the average or normal with meticulous care. It is currently considered good practice to avoid anemia, to provide adequate protein intake, some attention to gain of weight, not in excess of twenty to twenty-five pounds, limitation of intake of all foods containing sodium beginning in the normal patient at four and one-half to five months and in the hypertensive at two months. The presence of rapid gain of weight, followed by rise of blood pressure, should be regarded with suspicion. Institution of bed rest, sedation, use of NH_4Cl for periods of four days, followed in some instances by use of exchange resins may be all that is required. Failure to improve on the above program should call for hospitalization, observation eye grounds, observation of response to various hypotensive drugs including the test for pheochromocytoma; exact record of intake and output of all fluids; and, if albuminuria has occurred, quantitative estimation. Many other observations regarding cardiac, vascular and kidney functions may be in order. If the attendant is aware of the value of these many additional observations, his consultant will be for the purpose of confirmation of diagnosis and evaluation of the indications for future conduct of the case. If his familiarity with these tools for diagnosis is lacking, his Internist Consultant should remain in attendance to supplement with his wisdom the indicated obstetric management for continua-

tion or interruption of pregnancy. Unless the future will prove the value of the use of hypotensive drugs, there is no proved method of treatment of an uncontrolled pre-eclampsia except the delivery of the pregnancy by the best obstetric means according to the stage of pregnancy, the condition of the cervix, the gravidity of the patient, the viability of the fetus and the condition of the patient, and response to management. In certain hands the use of drugs to reduce blood pressure has proven of great value to prevent or stop convulsions, to relieve the peripheral resistance and, according to some, to improve renal blood flow. However, most observers note continuation of the albuminuria, and that the drugs used are successful only while given intravenously. Attempts to carry such patients indefinitely on I.V. therapy is difficult and does not always prevent intra-uterine fetal death. Hypotensive drugs, therefore, along with such other agents as $MgSO_4$, O_2, sedation, balancing of electrolytes digitalization, etc., provide means to control the progressing and even the fulminating eclampsia until such time as it is determined the patient's condition warrants induction or cesarean according to indication.

Rapidly fulminating toxemias require extremely fine judgment as to when and how, and should have the advantage of some degree of expertness and experience as do decisions in other major illnesses.

Low grade prolonged toxemias, apparently judged not serious, in many instances, are tricky and dangerous and may result in catastrophe.

The decision to terminate a pregnancy in the last trimester after 34 weeks presents no problem except to do it when the patient is in the best possible condition and by the best obstetric means indicated by the cervix, the gravidity and the need for haste.

Decisions before, at, or near, the period of viability of the baby requires much more judgment and experience and confirmation of decision by adequate consultation.

In conclusion, we have attempted to indicate that the complications in this category are possibly of the same frequency as a generation ago; and that education of the public and the professional attendant to practice prenatal care in a meticulous fashion pays dividends. Prevention by attending to the alterations from the normal is the aim. Differentiation of the possibilities of the various characteristics which diagnose nephritis, essential hypertension without or with toxemia and the true toxemias, pre-eclampsia or eclampsia, is essential to good management. Much has been accomplished in reducing mortality in the past, but careful analysis of the records shows there are still areas of defection. The public needs to be aware of the absolute necessity of prenatal care. Certain physicians will improve their care of toxemias by more accurate and prompt attention to the basic concepts above related.

LICENSING OF MATERNITY UNITS IN MICHIGAN

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firmness, and to provide a reasonable time for hospitals to comply with all of the regulations. At first only five so-called critical items were used as a sample to determine the eligibility for licensure or certification. Now some forty-five additional items have been added to the so-called critical list and from time to time additional items will be added until the list includes all of the rules and minimum standards.

We should like to conclude with a note of accomplishment and point out what physicians and hospitals have done to improve patient care. The rules for maternity hospitals were first established in 1951. One year later in December of 1952, of approximately 260 hospitals listed, 114 had provisional licenses. Two years later, in December, 1953, only eighty hospitals had provisional licenses. Two and one-half years later there were fifty-eight hospitals with provisional licenses and now, almost three years later, forty-four hospitals have provisional licenses.

All of us at the Michigan Department of Health are proud of the job that hospitals and physicians have done and we realize so well that these things could not have been accomplished without the active participation of the members of the Maternal Health Committee of the State Medical Society. We shall continue to look to them for advice, guidance and help with continued progress

Michigan Maternal Mortality Study 1950-1952

Category IV. Heart Disease

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IT SHOULD be made clear at the outset that these twenty-eight cases have been presented in a very condensed form and that much pertinent information is lacking. For one reason or another many original hospital records were inadequate and incomplete. It would seem unfair, probably erroneous, therefore, to attempt an analysis and criticism of each case. However, as a group, certain interesting observations have been made which should be helpful to the obstetrician in evaluating the risk in such cases. Sixteen patients had rheumatic heart disease with mitral stenosis. Two others probably had mitral stenosis. If eighteen of the twenty-eight cases (64 per cent) had rheumatic heart disease with mitral stenosis this is not surprising when we consider that rheumatic heart disease would naturally be the most common cardiac defect in the childbearing age group.

The other ten deaths (36 per cent) were due to myocardial failure, the etiological diagnosis being quite obscure in some cases. It is interesting to note that of these ten, four were attributed to coronary thrombosis. If this were true, it would constitute a surprisingly high percentage for this etiological factor in women of this age group. A word of caution is interjected in this regard to the effect that coronary disease is seldom found in women less than forty-five years of age, especially in the absence of diabetes or hypertension. Of the four cases to which the diagnosis of coronary occlusion was applied not one was shown to have had diabetes or hypertension. Sudden and unexpected deaths have been too readily attributed to coronary thrombosis when an obvious cause has been lacking. Pulmonary emboli, rupture of congenital cerebral aneurysms, and other obscure vascular accidents are much more likely in women of this age.

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Several of the patients in this group apparently failed to seek, or actually avoided, prenatal care until they were beyond the point of reversible failure. It is impossible for the medical profession to offer this type of individual any help or to accept any responsibility toward them except through hygienic education of the public. In this respect it is heartening to note the interest and enthusiasm with which the public is receiving this type of information which is now becoming so available through publications, public forum, radio, and television. Our responsibility lies in maintaining a careful control of the material in order that it be authenticated and scrupulously presented. The Michigan State Medical Society and several of its sub-specialty groups have made excellent progress. Each member should be proud of the accomplishments so far and should be anxious to lend support in every way possible to the expansion of this service.

The successful and normal termination of pregnancy in a greater number of cardiac patients parallels a greater understanding of the etiological, anatomical, and therapeutic classification of heart disease on the part of internists and cardiologists together with improved prenatal control on the part of obstetricians. Interruptions of pregnancy and sterilizations become fewer and fewer as these specialists combine their efforts on the individual cases. This is exemplified by the report of Doctor Burton E. Hamilton on the results obtained in the prenatal cardiac clinic of Boston Lying-In Hospital. He states that since the clinic was instituted the maternal deaths of women with rheumatic heart disease has declined from 20 per cent to 3 per cent or 4 per cent. That there is need for considerable development and progress in this team work becomes quite glaringly evident in this group of obstetrical deaths. Sixteen (57 per cent) of these patients expired without the possible benefit of consultation, and in six instances a consultant was called when the patient was in terminal failure. If the complete details of each case were known, these figures might be shown to be somewhat misleading. The responsibility does not lie wholly with the attending obstetrician in this regard, for the records indicate that five of these sixteen women who died without consultation had never appeared for prenatal care. In thirteen (46½ per cent) no history or indication of heart disease was detected by the attendant until failure took place. This might also be considered a "par-

donable" group except that it seems unlikely that this many people could die of heart disease, being entirely void of any evidence until they were in serious trouble. It gives the impression that a more painstaking history and a more careful examination would have revealed some significant finding in a number of these individuals. It is understandable that a normal appearing woman presenting herself for prenatal care, and perhaps with a history of one or two or more uneventful pregnancies, might be given a cursory original interview and something less than an exhaustive physical examination. Frequently, in order to detect heart disease an examiner must think of heart disease. It could become easy in a branch of medicine in which a physician is dealing with a great majority of normal, healthy individuals, to forget to think about heart disease. In over half of these obstetrical deaths in which a cardiac defect was involved, there was a history of heart disease and a cardiac defect was noted on the original examination, yet no cardiac consultant was shown to have assisted in the management of the case.

In six instances the medical consultant was introduced to the problem early enough, but too often obviously bowed out of the picture after one examination, and after submitting his original opinion and recommendation. It should be conceded that once a cardiac defect has been recognized in a pregnant woman, she should be the combined responsibility of the obstetrician and the cardiologist. The cardiologist should assume an active part in guiding her through the duration of pregnancy and the postnatal period.

Too often the postnatal period is neglected by even the cardiologist. He breathes a sigh of relief, congratulates the young mother, and departs with a glow of self-satisfaction when he last sees her the day after parturition. Too often he is hastily summoned hours, days, or even weeks later to find a neglected patient in severe congestive failure. Keep in mind the picture of the man who runs with his suitcase and succeeds in catching the departing train, but is found a half hour later slumped in his seat, a victim of myocardial congestive failure. The same applies to the parturient woman who has the vigor and reserve to accomplish the act, but who does not have adequate reserve to accomplish the major readjustment of visceral circulatory balance. Fifteen, over half, of these twenty-eight obstetrical deaths occurred after parturition.

The classificaion of heart disease which has been established in accordance with the recommendation of the Criteria Committee of the New York Heart Association has become a real working aid in distinguishing the favorable and the unfavorable cardiac patient as regards the functional capacity. This functional capacity is given four categories.

Class I.—Patients with a cardiac disorder without limitation of physical activity. Ordinary physical activity causes no discomfort.

Class II.—Patients with a cardiac disorder with slight to moderate limitation of physical activity. Ordinary physical activity produces some discomfort.

Class III.—Patients with a cardiac disorder with moderate to great limitation of physical activity. Less than ordinary activity causes discomfort.

Class IV.—Patients with a cardiac disorder unable to carry on any physical activity without discomfort.

We are often confronted with the debatable point as to whether the cardiac is in greater danger during her first pregnancy or in subsequent pregnancies. Should the cardiac be permitted just one pregnancy, or having successfully consummated the first one, should she be permitted another and another? The figures in this series are inconclusive, of course. Ten were primipara and sixteen were multipara. In two cases the obstetrical history was not obtained. Statistics are obviously of no value in making this decision. Each individual must be considered discreetly with the fundamental thought of her cardiac tolerance and reserve. It is generally thought that the number of previous pregnancies is unimportant in estimating the individual's fitness from a cardiac viewpoint. Pregnancy will have no influence or effect upon the course of rheumatic heart disease in the patient who tolerates pregnancy well and who has never been markedly limited in physical activity, *i.e.*, the patient who falls in the functional capacity Class I and II. We have no good criterion for estimating when this patient is first going to fail. Some investigators of this problem claim that the number of years which have elapsed since the origin of the disease is the most important factor. The greater number of years intervening between the

initial rheumatic invasion and the onset of pregnancy, the greater is the likelihood of failure with pregnancy. Inasmuch as a very large number of these people have no idea when they had rheumatic fever, this is a useless tool. We do recognize that failure increases rapidly after age thirty-five. We probably should use this knowledge in prognosis and discourage pregnancy in women over thirty-five who have rheumatic heart disease. In this group of obstetrical deaths, seventeen were under age thirty-five and eleven were age thirty-five and over. We can assume that there were probably a great many more pregnancies in the women with rheumatic heart disease under thirty-five than there were over thirty-five, and that, therefore, the obstetrical death rate was much higher in the older age group.

We are inclined to feel much more confident of the cardiac who has never experienced congestive failure, yet this series of cases, as accurately as can be determined from the records presented, shows that only four of the twenty-eight women who died had congestive failure previously. That all but four of those who died in congestive failure expired during their original attack is significant, and would indicate that absence of previous failure is not a dependable prognostic criterion. Here again, however, we cannot help but wonder if some of these with "negative" histories might have yielded significant facts had they been carefully searched. For example, a few cases were described as having formerly experienced asthma or prolonged colds with cough. It is likely that these symptoms may have been manifestations of pulmonary edema with a cardiac background. It is obvious that we should be watchful for the patient who has had limited cardiac reserve before pregnancy for she is much more likely to fail during or following pregnancy.

If the typical course of progressive rheumatic heart disease were divided according to decades, we would have the initial infection occurring in the first decade. Recurrence or recurrences following hemolytic streptococcal infections occur during the second decade. The third decade should be quiescent and the heart quite competent. In the fourth decade myocardial reserve begins to lessen and congestive failure sets in. Fortunately, it is during the third phase that the most pregnancies occur and all goes well. When pregnancy occurs in the fourth decade or when the signs of failure begin to appear earlier than the fourth decade, then the obstetrical mortality rate increases rapidly. Once the cardiac has attained the functional classification III and IV she is in great danger with pregnancy in spite of the utmost care. Pregnancy can in no way be made safe for her. The success in lowering obstetrical mortality rates occurs almost entirely in the favorable Class I and II groups, whereas cardiac clinics and excellence of prenatal care have made very little statistical difference in the unfavorable Class III and IV groups.

Of the ten non-rheumatic cases of this series, four were hypertensive. In considering the pregnant woman with hypertensive heart disease, we again turn to our functional classification for prognostic aid. Those who can be placed in Class I and II usually do well, and are considered the favorable group. Those in Class III and IV are unfavorable in pregnancy. With the newer hypotensive drugs we have more to offer the hypertensive patient, although, as we all know many patients are refractory to treatment. Where control of the body weight and restriction of salt have been successfully governed throughout pregnancy, there has been a marked lowering of mortality rate in hypertensives.

The last etiological group of cardio-vascular defects in the child-bearing age to be considered is that of the congenital anomalies. No clear cut example of this appears in the cases studied. The same functional classification applies to these women as to the previous etiological groups. Those with poor myocardial reserve tolerate pregnancy poorly, those with fair to good reserve may tolerate pregnancy well. Wherever possible the exact defects should be defined, for in the diagnosis there will be prognostic help. In a number of cases there will arise the question of surgery during pregnancy for correction or amelioration of the defect. Surgery during pregnancy is in some cases feasible and successful. It is in this surgically correctable group, however, that this type of "prenatal" care should be offered the patient preceding pregnancy, even preceding marriage. It seems justifiable in some cases with congenital heart disease to interrupt an early pregnancy and perform the heart surgery in order that the patient might then proceed more safely with subsequent pregnancies. There is usually some evidence of myocardial stress following cardiac

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Category V. Anesthesia

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THE professional challenge inherent in the study of maternal deaths is evident in those associated with anesthesia. It arises from two important facts, first, that some 90 per cent of all deliveries now are conducted under some type of anesthesia, and second, that deaths related to anesthesia at the time of delivery are increasing. From published reports, anesthesia now appears to be responsible for 10 per cent of all maternal deaths.

Critical study of these deaths indicate that they result principally from inexperienced or incompetent administration, and unwise choice of anesthetic agent or technique. It is too often overlooked that the obstetrical patient presents peculiar, unusual, and often formidable anesthetic problems. During the three-year period of the present study, 1950, 1951, 1952, there were 382 maternal deaths in Michigan. Of these, 261 were considered as being directly related to childbirth. In twenty-two, death was due either to the anesthetic or anesthesia contributed significantly to it. Thus, 8.4 per cent of the maternal deaths in three years were attributed to anesthesia (Table I).

Seven deaths were associated with cesarean section, and ten with vaginal delivery. One occurred during an elective postpartum sterilization. Anesthesia utilized to manage toxemia of pregnancy accounted for the remaining four cases. Spinal anesthesia was the method in twelve cases. Single dose spinal was responsible for nine deaths (40.9 per cent of the total), continuous spinal for three (13.7 per cent). Inhalation anesthesia was used in six cases, the factor in 27.4 per cent of these deaths. Intravenous sodium pentothal was related to two deaths, caudal to one, and one

TABLE I. MATERNAL DEATHS DUE TO ANESTHESIA

Year	Maternal Deaths	Obstetrical Causes	Deaths Due to Anesthesia	Percent of Obstetrical Anesthetic Deaths
1950	115	84	8	9.3%
1951	141	89	9	10.1%
1952	126	88	5	5.6%
Total	382	261	22	8.4%

TABLE II.
CAUSE OF DEATH AND TYPE OF ANESTHESIA

Cause of Death	Cases	Type of Anesthesia	Cases
Respiratory arrest	11	Single Spinal	8
		Continuous spinal	1
		Caudal	1
		N_2O-O_2	1
Aspiration	2	Ether	1
		N_2O-O_2-Ether	1
Cardiac arrest	2	Ether	2
Anoxia	2	C_3H_6-O_2-Ether	1
		I V Pentothal	1
Meningitis	2	Continuous Spinal	2
Toxic myelitis	1	Single spinal	1
Laryngospasm	1	I V Pentothal	1
Drug sensitivity	1	Local	1

appeared to result from sensitivity to the drugs used in local anesthesia. These deaths demonstrate that the administration of an anesthetic in obstetrics is not without risk. It always must be kept in mind that the drugs which give freedom from pain are the most potent and lethal agents known in pharmacology.

One half of these deaths was caused by respiratory arrest. In ten cases conduction block anesthesia was responsible, single spinal in eight, continuous spinal and caudal in one each. One resulted from nitrous-oxide-oxygen anesthesia. Aspiration of vomitus was the cause of death in two cases, one patient dying of pneumonia within forty-eight hours as a result of aspiration. Cardiac arrest with ether anesthesia was responsible for two deaths. Anoxia was the fatal factor in the death from cyclopropane-oxygen-ether anesthesia, and in one of the deaths following intravenous sodium pentothal. Laryngospasm with sodium pentothal was the cause of death in the elective postpartum sterilization case. Meningitis was the final fatal factor in two cases following continuous spinal anesthesia used to combat oliguria in toxemia. Toxic myelitis following single spinal anesthesia was the final cause of death in one instance (Table II).

Anesthesia always involves at least three variables, the patient, the agent and technique chosen, and the person administering it. Table III illustrates the problem of two of these, the anesthesia and the anesthetist. In five of these fatal cases, the

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anesthesia was given by a house officer, three by a resident, two by an intern. In four cases it was administered by the attending physician himself; in one it was given by the attending osteopath. Three of the fatal cases had anesthesia by a medical anesthetist. A nurse anesthetist gave the anesthetic in two of the cases, the floor nurse giving it in two others. In five cases, the person could not be determined. Thus, in only five of these twenty-two deaths was the patient under the care of a person who had had particular instruction and training in anesthesia. In but four did the attending physician administer the anesthetic. Almost

TABLE III. ANESTHESIA AND ANESTHETIST

Anesthesia	Deaths	M. D. Anes.	Nurse Anes.	Att. Phys.	Res. or Intern	Nurse	Osteopath	Unknown
Single spinal	9	1	1	1	3	0	0	3
Continuous spinal	3	1	0	0	1	0	0	1
Caudal	1	0	0	0	0	0	1	0
Local	1	0	0	1	0	0	0	0
I V Pentothal	2	0	0	1	0	0	0	1
Inhalation (6)								
Ether	3	0	0	1	1	1	0	0
N_2O-O_2	1	0	0	0	0	1	0	0
N_2O-O_2-Ether	1	0	1	0	0	0	0	0
C_3H_6-O_2-Ether	1	1	0	0	0	0	0	0
Total	22	3	2	4	5	2	1	5

60 per cent of these cases were given their fatal anesthesia by those whose understanding and experience in anesthesia must be considered minimal. Preventability and responsibility are not evaluated in these deaths. Nevertheless, they bring into focus the sad and undersirable fact that obstetric anesthesia too often is looked upon much like a dowdy, poor relation who should be pleased and satisfied with whatever she is given. Obstetric anesthesia, unfortunately, is haphazard, its choice being determined largely by whom is available to administer it rather than by the proper method for the obstetric and anesthetic problem involved.

Conduction block is an extremely important and useful form of anesthesia for delivery. It is unfortunate that its ease of administration has relaxed the discipline which its use demands. One always must remember that for vaginal delivery that half the usual dose of the anesthetic drug is adequate. In five instances, the amount of drug used was excessive. The recommended doses of the following drugs should be remembered.

For Vaginal Delivery

Procaine hydrochloride .....
25 to 50 mg. with or without dextrose
Piperocaine hydrochloride (Metycaine).....
20 to 30 mg. with or without dextrose
Tetracaine hydrochloride (Pontocaine).....
2 to 5 mg. with 5 per cent dextrose
Debucaine hydrochloride (Nupercaine).....
1.5 to 3 mg. with 5 per cent dextrose
Lidocaine hydrochloride (Xylocaine).....
25 to 40 mg. with or without dextrose

For Cesarean Section

Continuous Spinal

1. Initial dose as listed for vaginal delivery.
2. Repeated in no larger dose, no more frequently than 30 minute intervals.

Single Injection Spinal

Procaine hydrochloride.....75 to 100 mg.
Tetracaine hydrochloride (Pontocaine).....7 to 10 mg.
Debucaine hydrochloride (Nupercaine).....3 to 5 mg.

Fatalities from spinal anesthesia result from circulatory failure. Consequently, an experienced observer must be present to watch blood pressures and respirations closely. When complications arise he should be able to recognize them and cope with them. Disaster does not strike without warning. The anesthetic level does not always remain fixed, it may rise six segments after delivery has been completed. Increased spinal fluid pressure also may raise the level to dangerous heights. Consequently, retching, vomiting, coughing and extra straining on the part of the patient must be avoided or firmly dealt with if they occur.

Hypotension is often seen and can be a serious complication for both the mother and her infant. Intravenous fluids should be started routinely before spinal anesthesia is given for cesarean section; it provides a ready means for prompt administration of vasopressor drugs and other agents to combat shock should it occur. It should be used with equal frequency at vaginal delivery whenever complications are present or may be anticipated, such as following prolonged labor, multiple births, or any operative delivery, except, perhaps, outlet, perineal forceps. Adequate equipment for resuscitation is essential to every delivery room. An anesthetic machine, ready to use,

with an adequate supply of oxygen should always be at hand when spinal anesthesia is given. When respiratory paralysis does occur, the only effective method of giving oxygen is by positive pressure inflation of the patient's lungs at a rate of twenty times per minute.

Aspiration of vomitus or gastric fluid is one of the most feared and serious complications of inhalation anesthesia. Unless vigorously and promptly treated it results in severe morbidity or eventual fatality. Every physician should stress at the onset of labor, as well as during the prenatal course, that the patient should take no food. A liquid, non-curd forming diet occasionally may be permitted. Patients who during labor continually regurgitate small amounts of gastric fluid, and this occurs often in prolonged labor, can be best managed by emptying the stomach with a Levine tube. An endotracheal airway helps avoid gross contamination of the respiratory tract during inhalation anesthesia. If aspiration does occur, catheter endotracheal suction or immediate bronchoscopy will save many lives. Following delivery, all patients who have aspirated should be treated with appropriate antibiotics, humid oxygen by tent or catheter, and should be encouraged to cough at regular, frequent intervals.

The use of conduction block anesthesia for the treatment of pregnancy toxemia has been extremely controversial. It is significant that very few clinics throughout the United States use continuous conduction anesthesia for the eclamptic patient at the present time. The four cases of toxemia treated unsuccessfully by conduction block were at best difficult cases to manage. Two of these were hypertensive patients with some renal impairment who developed signs of a superimposed toxemia. It is in these patients particularly that spinal anesthesia should not be used.

Insufficient data regarding the course of the anesthesia, the drugs and techniques used, and observations of blood pressure, respirations, and pulse made it difficult to arrive at an exact explanation of some of the deaths. Autopsies were performed on eleven of these women whose death was attributed to anesthesia. In the remainder, careful analysis and reconstruction of the course of events permitted the deductions which have been made.

We appreciate keenly the difficulties which presently surround obstetric anesthesia. Trained and experienced anesthetists are not available in sufficient number to have one present at every delivery. Prospects of achieving this ideal are so distant, that for now it must be considered an impossibility. Thus, every obstetrician should know fully the limitations of all forms of anesthesia and the abnormal physiologic states they initiate. As medical anesthesiologists increase in number and in geographic distribution and as they undertake active study of the problems of obstetric anesthesia, those who deliver the parturient will have increasing help and support in continuing the decrease in maternal mortality. And despite the present handicaps, obstetric anesthesia will be materially improved if there is:

1. More detailed understanding of the peculiarities of obstetric anesthesia.
2. Greater experience and competence of the individual administering anesthesia in obstetrics.
3. Scrupulous adherence to the indications and contraindiations of the various techniques.
4. Constant vigilance to anticipate anesthetic complications and their prompt proper treatment when they occur.
5. Greater development of a sense of responsibility for obstetric anesthesia by the obstetrician, the medical anesthesiologist and the hospital administrator.
6. Establishment and subsequent enforcement for each individual hospital of detailed and specific regulations for obstetric anesthesia.

TRUDEAU SANATORIUM

The Trudeau Sanatorium, the oldest institution for the treatment of tuberculosis, one of the most devastating diseases not so long ago, closed on December 1, 1954, because of the decline in the number of patients. The length of stay has been shortened by new drugs and surgery. The Sanatorium was established seventy years ago. In 1900, 200 deaths from tuberculosis occurred in every 100,000 persons, but now the number is 12.6 for every 100,000 persons. Other tuberculosis institutions have also ceased functioning. Such is progress.

Michigan Maternal Mortality Study 1950-1952

Category VI. Deaths from "All Other Causes"

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THIS BRIEF analysis is presented of eighty-three maternal deaths from "all other causes." (Table I). Unfortunately, in spite of a thorough investigation of all maternal deaths, the data in many is most incomplete and the cause of death cannot be ascertained, as in those instances where the woman died at home unattended and the death certificate was signed out by a coroner, or she was dead on arrival at the hospital or died shortly after admission without previous medical observation. The size of this group is sufficient to emphasize a plea for the use of autopsy in all cases, particularly those in which death cannot be adequately explained. In other instances the hospital and physician's records were so incomplete that an evaluation could not be made of the factors leading up to the death, and in a few cases the co-operation of the attending physician could not be elicited to secure information of value. From the standpoint of those who are endeavoring to review these deaths that they may be utilized for postgraduate medical education, we ask that physicians in Michigan co-operate with the study by providing adequate histories, physical examinations, and complete records of patients' progress.

In this group of thirty-two deaths from miscellaneous obstetrical causes, there were six due to chorionepithelioma. Five deaths followed transfusion with incompatible blood, three of which were on the basis of the Rh factor.

Another five deaths resulted directly or indirectly from attempts at abortion. Two of these resulted from pulmonary air emboli following insertion of a catheter; two deaths which occurred under suspicious circumstances were autopsied and evidence of instrumentation was present; the fifth followed ingestion of an unknown toxic substance causing marked hemolysis of the blood with a hemoglobin of 5 per cent on admission to the hospital. Autopsy in this latter case revealed evidence of attempted instrumentation as well as toxic degeneration of all the organs.

One patient died following rupture of the bladder with peritoneal extravasation of urine and rupture of the uterus subsequent to a mid forceps delivery in a pre-eclamptic patient; she expired during laparotomy undertaken to correct the condition twenty-four hours postpartum. Three patients died of possible amniotic fluid embolism and two from possible pulmonary embolism not considered to have been on an infectious basis.

In another ten patients the details surrounding the death are so incomplete that to assign a cause would be mere conjecture. However, since these unexplained sudden deaths occurred during labor, delivery, or within a few hours following delivery, and from the meager evidence available appeared to be related to the pregnancy they have been classified as obstetrical deaths. Two of them died in a shock-like state following Caesarean section.

In the group of fifty-one deaths from non-

TABLE I. DEATHS DUE TO ALL OTHER CAUSES

International Classification	Condition	No. Cases
	Obstetrical Causes	
173	Chorionepithelioma	6
650.2	Abortion, without sepsis, self-induced or induced without medical indication	5
677	Delivery with other traums	1
684	Puerperal pulmonary embolism	5
688.2	Sudden death from unknown cause in the puerperium	10
N998.3	Incompatible transfusion reaction	2
N998.4	Immunization with Rh factor with symptoms	3
Total		32
	Non-Obstetrical Causes	
153	Carcinoma of sigmoid	1
163	Pulmonary carcinoma	1
170	Carcinoma of breast	5
171	Carcinoma of cervix	1
191	Sq. cell carcinoma skin-graft	1
193	Glioblastoma	2
195	Pheochromocytoma	1
204.3	Acute leukemia	1
260	Diabetes mellitus	5
292.6	Sickle-cell anemia	1
296	Idiopathic thrombocytopenic purpura	1
331	Cerebral hemorrhage	7
465	Pulmonary embolism	2
541.1	Ulcer of duodenum with perforation	1
570.2	Mesenteric infarction	2
570.5	Intestinal adhesions with obstruction	1
648.3	Air embolism (pulmonary)	1
744	Myasthenia gravis	1
780.2	Grand mal convulsion with suffocation	1
784.5	G. I. hemorrhage	1
795.5	Death from unknown cause	6
E825	Motor vehicle accident	4
E878	Poisoning (ergot and $MgSO_4$)	2
E917	Burns	1
E983	Assault	1
Total		51

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obstetrical causes, there were eleven due to malignancy, including five carcinoma of the breast, one carcinoma of the cervix, one of the sigmoid, one pulmonary carcinoma, two glioblastoma, and one squamous cell carcinoma arising in an ulcer in the grafted area of an old burn. One patient was found at autopsy to have a pheochromocytoma.

There were seven deaths attributed to cerebral vascular accidents in non-toxemic patients, several on the basis of congenital aneurysm. Another five deaths resulted from diabetes. Six accidental deaths occurred: four of which were due to auto accidents, one from burns sustained from a fall onto a hot stove, and one from assault. Two deaths followed gastrointestinal hemorrhages. Two other patients had mesenteric thrombosis, one of which terminated by pulmonary embolism. Two additional deaths from non-puerperal pulmonary emboli followed exploratory laparotomies, one performed for an acute surgical abdomen which revealed a massive retroperitoneal hematoma probably on the basis of a ruptured aortic aneurysm and the other for a mistaken diagnosis of fibroid uterus which proved to be an unsuspected pregnancy.

One death followed intestinal obstruction due to adhesive bands which formed subsequent to a former operation. Other causes include one from suffocation during a grand mal seizure; one from leukemia; one from idiopathic thrombocytopenic purpura; one from myasthenia gravis; and one from sickle-cell anemia.

Ergot taken in an attempt to induce an abortion at three months' gestation was responsible for one death. Another woman ingested a large quantity of $MgSO_4$ on the day following discharge home from the hospital after a spontaneous abortion and died from magnesium intoxication. Death in another woman at approximately three months' gestation resulted from air embolism following douching; the autopsy revealed air under pressure under the placenta, but in this case there was no evident attempt at abortion.

In the remaining six deaths in this group data is not complete enough to assign a cause; since they did not seem to be related directly to the pregnancy, they have been classified as non-obstetrical deaths.

In a study of the above non-obstetrical deaths, it is apparent that even though the cause was unrelated to the pregnancy, in some cases had the patient received adequate prenatal care with surgical or medical consultation when indicated, the condition might have been successfully treated and the patient might have survived her pregnancy. For example, one patient received prenatal care from the second to the sixth month of her pregnancy when she was hospitalized for an undiagnosed coma. Admission urinalysis showed a 4 plus sugar and a blood sugar was reported as 435 mgm. per cent. It is hard to comprehend why a woman with such a severe diabetes did not show a positive urine sugar earlier in pregnancy! And in the record of a second patient who was admitted to the hospital in coma at seven and one-half months, it is stated that prenatal care was begun in the third month; glycosuria was recorded as present at all visits—yet the diabetes was unrecognized and untreated until after coma developed!

From this critical review of maternal deaths in Michigan, it is the belief that if knowledge currently known about the management of obstetrical complications had been utilized, many of these 382 mothers would have survived their pregnancies. Better education of the public concerning the value of early prenatal care would also reduce the number of deaths which are now charged to patient responsibility because they did not seek medical care.

AID FOR ASTRONAUTS

It has been suggested by I. M. Levitt, Director of Philadelphia's famed Fels Planetarium, that space travellers should be furnished specially designed polaroid "sunglasses," with tiny photelectric cells and motors hooked to the polaroid lens, so that a constant amount of light will reach the eyes.

Dr. Levitt points out that after the earth's atmosphere has been passed there is nothing to soften the light of the sun nor to produce a haze that will cast shadows; in one direction will be utter darkness, in the other direction, brilliant light.

The eye's marvelous adaptive power will be equal to this difference in brilliance of a billion times, but the demand must not be made too suddenly.—*Guildcraft*, December, 1954.

Use of Dried Fibrinogen (Human) for the Control of Hemorrhage

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and
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DRIED FIBRINOGEN (human) is a product prepared from human blood by modification and elaboration of the method of Cohn et al.[3]

A number of reports indicate that this product is useful in the management of severe hemorrhage due to low levels of fibrinogen associated with the following conditions:

1. Obstetrical hemorrhage. Recent reports by Schneider[13] and also Hodgkinson et al[6] provide an extensive discussion of the obstetrical conditions which cause hypofibrinogenemia. Premature separation of the placenta and the role of fibrinogen in the control of hemorrhage are described by Moloney et al[9] and Weiner et al.[15,16] Amniotic fluid embolism has been discussed by Schneider[13] and Reid et al.[10,11] Long standing fetal death has been described by Schneider[13] and Hodgkinson[6] and Reid.[12]

2. Congenital absence of fibrinogen has been described by Alexander et al,[1] MacFarlane[8] and Lawson.[7]

3. Hypofibrinogenemia in surgical patients with cardiac arrest has been described by Coon and Hodgson.[4]

4. Pulmonary surgery (manipulation of lung tissue in pneumonectomy, et cetera) may be associated with hypofibrinogenemia.[5]

5. Blood transfusion reactions may cause sharp decreases to critical levels of blood fibrinogen. Five cases have been reported to us to date where transfusions of fibrinogen controlled severe hemorrhage which followed transfusion reactions.

During the period from May, 1952, to September, 1954, the Michigan Department of Health prepared and distributed 939 bottles of fibrinogen. Distribution was arranged on a nationwide basis by the Medical Staff, Blood Program, American National Red Cross, who also agreed to obtain adequate clinical reports from each physician using the product. A brief summary of these reports was presented earlier.[2]

It is not the purpose of this report to present detailed discussions of any of the individual cases; however, it should be pointed out that approximately one-half of the cases treated were diagnosed Abruptio Placentae, and two-thirds of the cases were associated with pregnancy.

TABLE I. CASES TREATED WITH FIBRINOGEN

Type of Case	No.
Abruptio Placentae	64
Miscellaneous Postpartum	21
Postsurgical-Post-traumatic	20
Dead Fetus	8
Transfusion Reaction	5
Congenital Hypofibrinogenemia	4
Miscellaneous	9
	131

It is also interesting to note that in the 131 cases reported to us, hemorrhage was controlled in all but two cases by fibrinogen together with whole blood. In those cases which did not respond there was little doubt that fibrinogen was administered too late.

It has been repeatedly pointed out by Reid et al,[10,11,12] Schneider[13,14] and Hodgkinson et al,[6] that in mild cases of fibrinogen depression whole blood, fresh plasma or dried plasma may be sufficient to restore adequate levels of fibrinogen. Certainly whole blood is an important part of therapy for any hemorrhagic state. Reid et al have emphasized in several reports, however, that in acute depression of fibrinogen, hemorrhage is profuse and fibrinogen replacement is required. Weiner[15] states: "to replace fibrinogen from an extremely low level to the normal level by blood transfusion is an impossible task . . ." This was repeatedly demonstrated in the cases reported to us. Innumerable transfusions of whole blood failed to control the hemorrhage, yet fibrinogen administration controlled it rapidly. The average pint of blood probably does not contain more than 1.25 gm of fibrinogen, yet many patients without extensive blood loss may require from 6 to 14 gm of fibrinogen within a few hours. To provide this fibrinogen through whole blood tranfusions would dangerously overload the vascular system. To terminate pregnancy associated with Abruptio Placentae, amniotic embolism or long standing dead fetus by Caesarean section or induction of labor without correcting dangerously low fibrinogen levels may have serious consequences.[11,15,16]

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These observations emphasize the importance of adequate laboratory control in the diagnosis and treatment of such cases. It is especially important that quantitative tests for fibrinogen should be performed when hypofibrinogenemia is suspected. Schneider[14] has proposed a rapid method which requires a minimum of laboratory equipment and skill, for use in following the fibrinogen levels during the course of therapy. The use of oxalated or citrated plasma instead of whole blood in the test may have one advantage, namely, that it is easier to differentiate clot lysis from clot fragmentation. Where true clot lysis exists more fibrinogen may be required to establish and maintain adequate levels of fibrinogen.

Because of the varying requirements of different patients no definite dosage of this product can be recommended at this time. In the case reports which we have received the dosage ranged from 1 to 10 grams. The critical blood level is considered to be 100 to 150 mg. per cent,[16] and sufficient amounts of fibrinogen should be given to raise the blood levels above 150 mg. per cent Sufficient quantities of whole blood should be given along with fibrinogen, to restore the patient's blood volume.

No serious immediate or delayed reactions have been reported following the intravenous administration of the product when used as recommended. The data are not adequate to state whether or not the method used in the preparation of this product completely destroys the virus of homologous serum jaundice (hepatitis B); therefore, each physician must consider that such a risk may exist. This again emphasizes the importance of laboratory control to determine when and how much fibrinogen may be required.

As prepared and distributed by the Michigan Department of Health each bottle contains a variable amount of fibrinogen (1 to 3 gms), but a constant amount of buffer salts (6.0 gm dextrose, 1.47 gm sodium citrate and 0.34 gm sodium chloride). When reconstituted with 200 ml of water for injection (sterile, pyrogen-free distilled water) the resulting solution is isotonic with whole blood. The product is subjected to ultraviolet radiation before it is dried, to reduce the risk of transmitting homologous serum jaundice (hepatitis B). It is intended for intravenous administration and must be used within one hour of the time of reconstitution. A standard blood recipient set with filter should be used for administration.

Dried fibrinogen (human) is available to the profession of Michigan on request. The authorities of fourteen hospitals have agreed to act as distributors for this product. These have been selected geographically so that, with the facilities of the four state laboratories no accredited hospital in Michigan is more than seventy-five miles from a source supply of fibrinogen.

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Surgical Diagnosis and Treatment of Acute Gynecologic Conditions

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ACUTE GYNECOLOGIC conditions for which surgical treatment is necessary fall naturally into two general groups, abdominal emergencies and vaginal emergencies. Because acute appendicitis is the most commonly encountered emergency involving the lower part of the abdomen, it is necessary to include it in any discussion of the diagnosis and the surgical treatment of the acute lesions of the pelvis.

The relative frequency with which some of these conditions were encountered during a five-year period (1945 to 1949, inclusive) at the Mayo Clinic may be of interest. During this period, 1,970 emergency operations were carried out on the general surgical services at the clinic. Nine hundred and twenty (46.7 per cent) of these emergency operations were carried out with the preoperative diagnosis of acute appendicitis, while 270 (13.7 per cent) were done for gynecologic lesions.

The proper management of any of these conditions demands a complete history and a thorough physical examination. As Carrington[1] pointed out in a discussion of diagnostic errors in a series of 1,932 emergency gynecologic cases, the cause of error was usually in overlooking some detail of the physical examination or of the history but not in the ability or lack of ability of the examining physician. The total knowledge that the surgeon has obtained concerning the patient and her background as detailed by a careful history enables him to apply the finest discrimination in surgical judgment before and during the operation, while the knowledge that the surgeon has of the situation that he faces, as well as his recognition of the more common dangers of surgical treatment, aids in the prevention of postoperative complications and in reducing morbidity.

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Appendicitis

Appendicitis cannot be easily disposed of in this discussion, as it often cannot be easily disposed of in the diagnosis at the bedside. Yet, in the very great majority of cases acute appendicitis behaves according to a definite pattern, and a careful history usually defines that pattern, even through a haze of confusing details. The onset with pain, which is usually periumbilical in location, is so typical of appendicitis that a story of initial symptoms of nausea and vomiting or of fever appearing prior to the occurrence of pain makes the physician wary of other conditions than appendicitis. The fact that nausea and vomiting come after pain in development of the symptom complex is valuable evidence. Most important is the fact that the original, vaguely localized pain shifts in a few hours to a more definite location which is usually in the right lower quadrant and the pain is now fairly constant in severity; the appendix which lies over the pelvic brim and which produces a downward shift in pain is a variant of the same feature, that is, a shift in position and a more definite localization of pain. The development of nausea and vomiting and fever after the appearance of pain lends weight to the diagnosis but is more inconstant than the nature of the pain.

The physical signs of appendicitis are also typical in the great majority of patients but such factors as the age, general condition and physique of the patient affect the intensity of the tenderness, rigidity and "rebound tenderness" which are usually present in the right lower abdominal quadrant; but the point of greatest tenderness nearly always coincides with the point of most intense pain in acute appendicitis. The emotional and constitutional make-up of the patient affects the responses to the maneuvers of the examination in a variable degree, and an appreciation of these factors, obtained by a careful and observant history, is often of considerable importance in the basic decisions of diagnosis and treatment.

Protective spasm of the overlying muscles, though it may be of relatively slight degree in some cases, is added evidence of real peritoneal irritation at this area. Rebound tenderness is more variable than rigidity, and while often present, it

is not necessarily "referred" by the patient to the site of greatest pain and tenderness. Rectal or vaginal examination should never be omitted. In the presence of acute appendicitis these examinations may yield some tenderness to pressure in the right side of the pelvis; however, in the case of the pelvic appendix the tenderness is often exquisite and may establish the diagnosis. The absence of significant gynecologic findings lends much weight to the diagnosis. But it is in the presence of other conditions, either surgical or nonsurgical, that these examinations are most important; in the former the proper placement of the incision and the orderly conduct of the operation are made easier, and in the latter the avoidance of an unneeded operation is possible. The laboratory data are valuable, in a confirmatory way, in acute appendicitis, but are of much less importance than the history and physical examination. The elevation of the leukocyte count and the increased proportion of neutrophils are merely the evidences of an inflammatory process, the nature and location of which must be determined by sound clinical methods. The sedimentation rate is a more reliable diagnostic factor in that it is almost always within normal limits in acute appendicitis and elevated in almost 100 per cent of the cases of acute pelvic inflammatory disease.

Abdominal Gynecologic Emergencies

Of the 270 emergency gynecologic operations in the period mentioned, 108 (40 per cent) were abdominal, and these were the most serious of the acute gynecologic conditions. Seventy-seven of these cases (71.3 per cent of the abdominal emergency operations) involved intraperitoneal hemorrhage, and ruptured ectopic pregnancy was the commonest cause of the bleeding (57 of 108, or 52.8 per cent).

Ectopic pregnancy occurs about once in 300 normal pregnancies,[9] and in 70 per cent of cases the patients are multiparous. Also, a patient who has had one ectopic pregnancy has an increased likelihood of having a second ectopic pregnancy since the condition of the two tubes may be similar. Generally the patient is seen in mild shock and is pale and perspiring; the abdomen is extremely tender, with marked rebound tenderness but little or no muscle spasm to continuous pressure. Pelvic examination will definitely show extreme pain on any movement of the cervix and also may reveal a tender bulging mass in the cul-de-sac of Douglas and possibly a mass in one adnexa. Suggestive signs of pregnancy should be sought, such as softening of the cervix, enlargement of the uterus, bluish discoloration of the introitus, and so forth. The temperature is low or subnormal, the pulse rapid and weak and the blood pressure low, depending on the degree of shock that is present. The leukocyte count will become elevated after a few hours as a result of the blood in the peritoneal cavity, but it is not an accurate measure of the amount of bleeding. Restlessness, particularly with "air-hunger," is the more reliable clinical sign of severe loss of blood.

The history of typical cases will be of a very sudden onset of acute low abdominal pain, usually with a sensation of faintness if not actual fainting or collapse. The pain is continuous, and if blood reaches the diaphragmatic peritoneal surface there will be referred pain to the shoulder, an excellent diagnostic aid. The last menses may be absent or possibly delayed but most often are scanty. However, the spotting may continue for days after a normal period should have ended.

The differential diagnosis of a typical ruptured ectopic pregnancy is not difficult, but certain other acute abdominal conditions have to be considered. Torsion of an ovarian cyst may produce pain as sudden and as continuous as in ruptured ectopic pregnancy; however, pelvic examination will disclose the cyst or at least show that the tenderness is definitely limited to one adnexa without as much pain on gentle manipulation of the cervix as is found in ectopic pregnancy. The suggestive signs of pregnancy are lacking and the menstrual history is normal, while there is no evidence on clinical grounds or in the laboratory findings to indicate a severe loss of blood.

Acute appendicitis is confusing only when the appendix is located in the pelvis; even so, the history of gradual onset of centrally located abdominal pain which later becomes localized, and the gastrointestinal symptoms of nausea and vomiting point to the diagnosis of appendicitis. The menses are normal. The marked physical signs in appendicitis are often localized to a very small area in the abdomen, and there are no signs of sudden severe shock and no evidence of bleeding.

Acute pelvic inflammatory disease may be confused with tubal abortion with slow bleeding but not with the sudden typical tubal rupture and hemorrhage. Acute pelvic inflammatory disease

customarily follows the menses or some other pelvic insult, and may cause vaginal bleeding. However, the temperature and leukocyte count are increased, the sedimentation rate is always elevated, the tenderness on pelvic examination is usually bilateral, bilateral adnexal masses may be palpable and there may be evidence of recent acute infection in the vagina or cervix.

In cases of tubal abortion when the products of gestation are separating or are passing out of the fimbriated end of the tube, the bleeding and shock are not so catastrophic. With the tissue in the fimbriated end of the tube, the intra-abdominal bleeding may slow or even cease for hours or days and then resume. A suggestive history of an abnormal menstrual period followed by prolonged spotting plus rather sudden pain in the pelvis should lead to consideration of ectopic pregnancy; when a tender mass is present in one tube the diagnosis is practically complete. If the patient's general condition indicates that only minimal bleeding has occurred it may be worth while to await the results of a Friedman test. Alternately, or if the general situation and the Friedman reaction do not clarify matters, posterior colpotomy can be done easily; the presence of free blood in the cul-de-sac is sufficient evidence for abdominal exploration.

When the patient is in shock at the time of admission the characteristic history and physical findings leave little doubt as to the diagnosis, and when the diagnosis of bleeding ectopic pregnancy has been made the only definitive treatment is surgical. The patient can be treated for shock while the operating room is being prepared. A large-bore needle should be inserted in a vein as soon as possible, and administration of blood, blood substitutes or glucose solutions should be started, depending on the urgency of the patient's condition. In any case, the needle should be satisfactorily in place in the event that the transfer of the patient to the operating floor produces increased bleeding and possibly sudden vascular collapse. If time is not available for blood grouping and cross matching, blood from group O, Rh-negative donors should be used, and the operation should be started immediately. The abdomen is quickly opened through a lower midline incision, and a hand is passed immediately into the pelvis. The uterus is identified and the tubes are rapidly palpated to determine which one contains the pregnancy. This tube can then be tightly clamped between the fingers to control the bleeding, and the situation is now under good control. While transfusions are continued at the indicated rate and volume, the clots and fresh blood should be evacuated from the abdomen, exposure of the pelvis obtained and finally salpingectomy carried out. The stump of the tube should be peritonealized with the round ligament. The remainder of the blood is removed as completely as possible, and it may be used for autotransfusion if desired. However, sufficient blood should be given to restore the estimated loss of blood. The opposite tube must be inspected, since bilateral ectopic pregnancies have occurred.[2] The appendix is best left alone when there has been considerable intra-abdominal bleeding, since its removal in the presence of such an excellent culture medium is an invitation to infection. In the succeeding days further whole blood replacement can be guided by hemoglobin determinations. These patients are usually young women, often with small children at home, and are faced with heavy household duties; their convalescence can be so greatly speeded up and helped by adequate blood replacement rather than by slow self-formation of blood, that the slight danger of a transfusion reaction is outweighed.

Regardless of how serious the condition of these patients appears when they are first seen, accurate diagnosis with early surgical intervention and early restoration of the circulating blood volume will reduce the risk to approximately 1 to 2 per cent. There were no deaths among the fifty-seven patients with ruptured ectopic pregnancies in this group.

The second commonest cause of intraperitoneal hemorrhage was bleeding from ruptured corpora lutea or endometrial cysts, which occurred in nineteen of the 108 abdominal emergencies (17.6 per cent). In seventeen cases the bleeding came from ruptured corpora lutea. In some of these cases bleeding was of minor degree; in others, the bleeding was of sufficient amount to cause protracted pain and, sometimes, to give signs of severe loss of blood. Classically, "Mittelschmerz" is the name applied to follicular cysts causing pain at the time of ovulation about fourteen days before the onset of the expected menses; but the name also has been loosely applied to ruptured corpus luteum cysts occurring a few days later in the cycle. The condition is characteristic of young, unmarried women, 70 or 80 per cent of the patients being less

than twenty-five years old.[4] It is due to the rupture of the graafian follicle cyst at the time of ovulation with the spillage of a small amount of blood into the peritoneal cavity. It also occurs in the third week of the menstrual cycle, when the corpus luteum has formed. When a corpus luteum ruptures, the bleeding may be more severe than after rupture of a graafian follicle cyst and very rarely has been exsanguinating.

Although the incidence of these conditions is not known, McSweeney and Wood[6] stated that in their experience there is one case of operation for ruptured cyst to every thirteen appendectomies. It is indeed a common condition when looked for, and in more than 50 per cent of the cases in which operation is performed there is a past history of similar attacks. These may occur at monthly intervals, may be on alternate sides and may cease spontaneously. In most cases the menstrual cycle is otherwise normal. With a sudden onset the pain is most severe at the beginning. It is usually unilateral and located low in the abdomen or in the pelvis. The temperature is minimally elevated and the leukocyte count rarely exceeds 12,000 per 100 cc. of blood. Nausea and vomiting occur in about a third of the cases. On abdominal examination, the tenderness is minimal, there is little, if any, muscle spasm, and there is no point tenderness as in appendicitis. Pelvic examination may show tenderness in one of the adnexal regions or a boggy sensation to the cul-de-sac.

Operations in these cases are usually carried out under diagnosis of acute appendicitis or ectopic pregnancy. But Mittelschmerz differs from acute appendicitis in that the pain starts low in the abdomen and remains there. It is maximal from the beginning and is associated with little tenderness and almost no muscle spasm. Mittelschmerz differs from ectopic pregnancy in that the menstrual history is normal, the pain occurs at midcycle, there have often been similar episodes in the past, the suggestive signs of pregnancy are absent, the Friedman reaction is negative, and there may have been no possibility of pregnancy.

When the diagnosis of Mittelschmerz can be made, the treatment is conservative but the patient should be kept under observation, since occasionally the bleeding is severe. The clinical course usually improves definitely in a few hours or in a day, and the leukocyte count returns to normal at the same time. If the diagnosis rests between appendicitis and Mittelschmerz, exploratory laparotomy should be carried out, and if signs of bleeding are sufficiently developed to suggest the possibility of ectopic pregnancy, the operation should, of course, be performed without delay. Exploration is best carried out through a midline or paramedian incision, and the bleeding follicle or corpus luteum cyst can be readily identified. As much ovarian tissue as possible should always be preserved. A few sutures may control the bleeding, or the lining of the cyst can be removed and the raw area closed by a locking hemostatic suture. The ovary should not be removed, for similar attacks can later involve the solitary remaining ovary. Both tubes should be inspected, for an unruptured ectopic pregnancy can be associated with this lesion. There is no objection to appendectomy after the usual small amount of blood has been removed from the pelvis.

Ruptured endometrial cysts were the source of intraperitoneal bleeding in two of the emergency cases, and in five other cases operations for ruptured endometrial cysts were done on scheduled lists but not as emergencies[7] during this five-year period. In these lesions the pain is sudden in onset, is experienced in the lower part of the abdomen and does not "shift" its location. Nausea, vomiting and fever are not usually a part of the picture, nor is shock associated with the pain. The patients tend to seek advice in a few hours, yet appear to be in remarkably good condition and are certainly not in shock. A menstrual history of increasing dysmenorrhea, and a history of sterility or "one-child fertility" may give the first diagnostic lead. Examination reveals lower abdominal tenderness and rebound tenderness, but little to no rigidity. The uterus and uterosacral ligaments are distinctly tender on manipulation. Nodules in the recto-uterine pouch and along the uterosacral ligaments, when present, are important findings. The diagnosis is often one of suspicion rather than of confirmation, and exploration is often necessary.

With the abdomen opened, the surgeon can make the diagnosis of ruptured endometrioma immediately by the presence of the collapsed cyst and the characteristic chocolate-colored fluid in the pelvis. The only true cure for endometriosis is removal of all ovarian tissue, since the endometrial cysts are dependent on functioning ovarian tissue for their activity. If the patient is nearing the menopause the treatment of choice is bilateral oöphorectomy, with or without hysterectomy. In

younger women the decision as to whether some ovarian tissue should be preserved will depend on the amount of pain and disability that the patient has had with her menses and whether she realizes that later surgical treatment may be necessary if conservatism is practiced. Hence, the importance of making or at least suspecting the diagnosis before exploration when these matters can be discussed with the patient. If the situation has not been explained to the patient preoperatively, it is far better to be conservative in the case of the young patient.

The remaining case of intra-abdominal bleeding in the seventy-seven cases in this group represents an unusual occurrence in which a capsular vein of a uterine leiomyoma ruptured spontaneously, giving signs of acute peritoneal irritation and loss of blood. The patient was treated successfully by total abdominal hysterectomy and the case has been reported previously.[3]

Torsion of an ovarian cyst or of a fallopian tube is a surgical emergency; yet many of the patients may have experienced previous milder attacks of pain or even have known of the presence of an adnexal tumor. Any tumor may twist on its pedicle but in the majority of cases the tumor is a cyst; in torsion of a tube the tube is usually adherent at its distal end and the torsion occurs about its long axis. Sixteen cases of torsion, ten involving cysts and six involving fallopian tubes, were dealt with among the 108 abdominal emergencies (14.8 per cent).

In torsion of a cyst the onset was typically sudden in more than half the cases; in others it was gradual. The pain is low in the abdomen and generally is unilateral; it may be "referred" along the thigh on the affected side. Nausea and vomiting are frequently present. Age of the patient is of no aid in diagnosis, since cases occur before puberty and after the eightieth year of life. There is no history or evidence of previous old pelvic infection, nor are signs of pregnancy or irregularity of menses present to suggest an ectopic pregnancy. Temperature, sedimentation rate and leukocyte counts are within normal range at first. Roentgenographic examination of the pelvis may visualize a mass directly, or may show some calcification as in a dermoid. Examination reveals that the lower part of the abdomen is tender and there is often rigidity of considerable degree if necrosis is present. The majority of tumors that twist on their pedicles are large enough to be readily palpable, and Kelberg and Randall[5] reported that the tumor could be palpated before operation in forty-one of their forty-two cases.

Torsion of a fallopian tube is usually much rarer than the experience in this group of cases (six in sixteen cases of torsion) would indicate. The symptoms are quite similar to those of torsion of a cyst but the physical findings are not so definite.

In the surgical treatment of torsions the abdomen should be opened through a midline incision with the patient in moderate Trendelenburg position. Cysts involved by torsion necessarily have distinct pedicles, and can be readily delivered and the pedicle divided between clamps. It is often necessary to remove the tube with the cyst, even if it is not involved in the actual torsion. The remaining ovary must be examined since in many cases ovarian tumors occur bilaterally. In the case of a twisted fallopian tube the treatment consists of salpingectomy with preservation of the ovary if feasible, but since this condition occurs primarily after adhesions from pelvic inflammatory disease, additional surgical procedures in the pelvis may be necessary and advisable. Since these patients are usually in good general condition and have not suffered from loss of blood, there is no reason for not performing appendectomy also.

Acute salpingitis is a medical disease in its early stages and should be treated by antibiotics, rest, adequate fluids and diet, and pelvic heat. In many cases nowadays the inflammation will subside and never require surgical attention. It is primarily in cases of early salpingitis when the diagnosis rests between acute salpingitis and appendicitis that pelvic inflammatory disease enters the field of the surgical emergencies. Pelvic inflammatory disease characteristically starts after some provocation such as childbirth, menstruation, alcoholic or sexual excess, or abortion. The pain occurs bilaterally, low in the abdomen, and the patients show evidence of a severe acute inflammatory process and often are acutely ill. The temperature may range from 102 degrees to 104 degrees Fahrenheit and the leukocyte count and the sedimentation rate are greatly increased very early in the disease. The lower part of the abdomen will usually be exquisitely tender, especially to the rebound maneuver, but with very little rigidity. There may be evidence of acute infection in the glands about the introitus or in the vagina or cervix; smears and cultures from these areas will determine if a neisserian infection is present. Bimanual examination will re-

veal extreme tenderness on motion of the cervix similar to ectopic pregnancy and bilateral adnexal tenderness or masses.

If acute appendicitis cannot be eliminated from the diagnostic possibilities exploration should be carried out. If acute salpingitis is present, even with purulent material oozing from the ends of the tubes, they should be left alone. Sulfonamides or other antibiotics, or both, may be left in the pelvis and, combined with postoperative therapy, a good chance of recovery with patent tubes is offered. Cultures of the peritoneal fluid often show no growth or organisms; therefore, it is advisable to take cultures from the vulvovaginal area at the time of examination. If the infection proves to be a flare-up of an old hydrosalpinx with sealed and obviously useless tubes, bilateral salpingectomy should be carried out. In some cases an abscess may be encountered, which will require drainage. Occasionally an abscess of the cul-de-sac later forms and does not resolve under antibiotic treatment, but this can be relieved by posterior colpotomy. In the present group of 108 abdominal emergencies, salpingitis was encountered on abdominal exploration in six cases (5.6 per cent). In four cases in which the inflammation was quite early, the operation was concluded as an exploratory laparotomy; in the other two cases residual hydrosalpinx was found and salpingo-oöphorectomy was carried out. In two cases abscess of the cul-de-sac was treated by posterior colpotomy and drainage.

Other abdominal emergencies which were encountered included three cases of strangulation of uterine fibroids, two cases of perforating carcinoma of the uterine fundus and two cases of perforating carcinoma of the ovary. In strangulation of uterine fibroids, which may occur in the gravid or nongravid uterus, the symptoms are rather severe abdominal pain with little nausea or vomiting. There is no evidence of shock or hemorrhage. The onset is not as typically acute as in torsion of a cyst and there is less abdominal rigidity than in the latter disease. The tumor itself is usually palpable and is exquisitely tender. Treatment consists of exploration and either myomectomy or hysterectomy. If necessary, myomectomy may be done during pregnancy with reasonable assurance that the fetus will not be lost.

Rarely do perforating malignant lesions of the uterine fundus and ovary produce signs and symptoms of peritoneal irritation and only if some malignant tissue, cyst contents or blood is suddenly spilled into the peritoneal cavity. Symptoms then vary from mild to rather severe sudden lower abdominal pain, depending on the amount of spillage and its nature. Nausea and vomiting are usually not observed. Abdominal tenderness, rebound tenderness and moderate rigidity may be noted when large contamination of the peritoneum produces fairly severe pain. Temperature and leukocyte count are usually not affected. Bimanual examination may reveal the tumor, but when a malignant cystadenoma ruptures it may produce symptoms as severe as those of acute appendicitis while the cyst has collapsed and is not palpable. Exploratory operation is usually carried out under a diagnosis of "acute abdomen" or "twisted ovarian cyst"; total abdominal hysterectomy was carried out in both of our cases of carcinoma of the fundus, and salpingo-oöphorectomy in the cases of perforated cysts.

Vaginal Gynecologic Emergencies

Vaginal emergencies do not cause the diagnostic difficulties that are produced in the abdominal cases. The presenting symptom is either hemorrhage or tumor. Cervical or endometrial polyps or pedunculated fibroids may twist on their pedicles or become infarcted. The patient may neglect the early symptoms and then present herself for emergency treatment only because of prolonged bleeding or of a malodorous discharge, and an examination then shows the necrotic tissue in the vagina. Small polyps can be removed by twisting them off at the bases but a pedunculated fibroid may be so large that it fills the vagina and must be removed by morcellation, in which case the resultant bleeding often requires tight packing of the uterus while treatment is directed at controlling the infection. In severe infections and when hysterectomy would otherwise be indicated, the operation is best delayed until the infection subsides.

Aside from unusual causes, such as severe bleeding from a ruptured hymen or from a cervical or uterine polyp, vaginal bleeding of such volume as to require emergency treatment nearly always arises in association with the termination of pregnancy, either by abortion or at term. It has been estimated that one in every four pregnancies ends in abortion, miscarriage or premature delivery, and the vast majority of these occur within the first sixteen weeks of gestation.[8] The abortion may be complete, incomplete or inevitable when

the patient is first examined, and the bleeding may vary from a very mild degree to the point of exsanguination.

If the hemorrhage is severe, supportive treatment with blood transfusion must be started immediately, and regardless of any evidence of infection the uterus must be emptied as quickly as possible. An intra-uterine pack can be used to control the bleeding, and antibiotics to combat infection.

When bleeding is mild or moderate, conservative treatment should be tried first. The patient is kept in bed and given intravenous fluids, and sedatives and oxytocics are employed. During this trial period the hemoglobin, erythrocyte and leukocyte counts are determined while urinalysis, blood group and Rh determination are also done. If the abortion has not been completed within twenty-four to forty-eight hours after institution of such treatment, dilatation and curettage should be carried out to save time and expense to the patient and to decrease the morbidity.

Most of these patients are young and healthy, and intravenously administered thiopental sodium (pentothal sodium) is a very satisfactory anesthetic agent, especially when supplemented by nitrous oxide-oxygen inhalation anesthesia. As little as 15 cc. of a 2.5 per cent solution of thiopental sodium may be enough for the whole procedure. The cervix is usually patulous, and may not need to be dilated while the use of a placental forceps will speed the removal of the larger portions of retained placenta. After the depth of the uterus has been estimated by bimanual examination with the patient under anesthesia and then measured by a uterine sound, curettage is begun with a large dull curet. As the uterine wall regains its tone a large sharp curet may be taken up. When the surgeon is satisfied that the uterine cavity is empty he should go over the whole interior again and by so doing he may assure himself that no areas have been overlooked as he both feels and hears the gritty response of uterine musculature to the sharp curet. The uterus is wiped out with a gauze strip, and if bleeding continues the cavity should be packed snugly. If the bleeding has been brisk, or if the uterus fails to contract to a firm consistency, then 1/320 grain (0.0002 gm.) of oral ergonovine maleate (ergotrate maleate) should be given every six hours for thirty-six hours. If an intra-uterine pack has been necessary it should be removed in twenty-four hours.

The patients in greatest danger are those who present themselves with sepsis, usually the result of criminal abortion. These patients may have suffered from extreme loss of blood, and often delay seeking a physician until the septic process is well established in the pelvis. The infection can be overwhelming, the patient's blood pressure low and her pulse thready. Adequate antibiotic treatment and blood replacement are both imperative and a very guarded prognosis should be given to the patient's family. Gentle curettage is necessary if the bleeding is moderate or severe in amount.

Of the 270 emergency gynecologic operations, 162 (60 per cent) were vaginal emergencies. In 155 cases the operation was required for vaginal bleeding; in seven cases acute abscesses about the vulva, arising in Bartholin's or Skene's glands, were treated by incision and drainage. In 120 (77.4 per cent) of the 155 cases of vaginal bleeding, retained placental tissue after incomplete or inevitable abortion was removed by dilatation and curettage. In twelve cases the retained placental tissue was removed after full-term delivery; in ten cases by dilatation and curettage, in one by subtotal abdominal hysterectomy, and in one by total abdominal hysterectomy. The only postoperative death in the 270 gynecologic operations was that of the patient treated by total abdominal hysterectomy.

This patient had suffered from a massive postpartum hemorrhage which was not controlled by packing, and hysterectomy became mandatory. In the postoperative period convulsions and coma developed, and at necropsy on the sixth postoperative day, multiple large areas of metastatic melanocarcinoma were discovered throughout the cerebrum. The primary lesion, it was later discovered, had been a "mole" on the forearm, which had been removed some two years previously. The child is alive and well and to date has shown no evidence of the tumor having crossed the placental bed.

In twenty cases (12.9 per cent) menometrorrhagia was of sufficient degree to require emergency operation. Bleeding was controlled by curettage in seventeen cases, vaginal hysterectomy was carried out in two cases, and total abdominal hysterectomy in one case.

In three cases of vaginal bleeding, curettage recovered hydatidiform moles; in all three cases cu-

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Management of Labor at Term

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THE TITLE for this presentation was chosen with considerable deliberation for two reasons. First, the instructions given me by your program committee stated that about 60 per cent of my audience would be physicians in general practice who are interested in the management of obstetric patients; second, this title will allow me to discuss some experiences which I have had in the management of labor and the deductions I have drawn from these experiences.

In many of our Philadelphia hospitals, the services of the Obstetric Department are open to men of the community who do not confine their interest or activities to obstetrical or gynecological problems. It is indeed in such a hospital where I have served for many years as either head or acting head of an Obstetric Service.

There have been many advances made in obstetric practices in the past thirty years. When my interest in obstetrics began, I was a junior medical student at Jefferson Medical College where there was an out-patient delivery service and I had the opportunity of attending many home deliveries. These deliveries were managed with untrained help and inadequate facilities and according to the standards of that period actually culminated successfully in every respect. The babies usually were healthy and the mothers seldom had any immediate morbidity. Of coure, we had no facilities for anesthesia, forceps delivery, episiotomy and perineal repair. Analgesia to a minor degree was available to us but was seldom used. Since that time obstetric practice has changed almost entirely and now most deliveries occur in well-equipped hospitals in which there is specially trained help such as residents, interns, medical students, nurses and anesthesiologists. Not every hospital has a complete list of physical facilities and personnel available but I think generally labor and delivery are managed with adequate physical facilities and with quite well trained and interested personnel. These changes have created a dilemma for most of us and it is really very difficult to decide how we shall use these changed circumstances to their best advantage.

Obstetric practice at the present time occupies in many instances the same position in relation to the patient as the family practice of the general practitioner. It is for this reason that the physician in so-called general practice continues to be chosen to care for the obstetric patient and it is for this same reason that many general practitioners are willing to assume considerable responsibility and usually acquire skill in the management of obstetric patients. Personally, I do not feel that it is necessary for a physician to be certified by an obstetric board to do capable work and give good and acceptable care to the patient. I do feel, however, that it is very necessary for a physician to be interested in the practice of obstetrics and to qualify himself by experience and judgment before he assumes the full responsibility for the care of obstetric patients. What I mean to imply is that if these services are demanded of a physician and he is interested in doing obstetric practice then it is the physician's responsibility to qualify himself to meet the present standards of the practice. I am sure that opportunities to qualify for the practice of obstetrics are available to all interested physicians in Michigan as they are in Pennsylvania. I feel quite confident that many patients away from the metropolitan areas will continue to choose the general practitioner who is their good friend and esteemed neighbor to render this important service.

The management of labor at term culminates most frequently an association of a patient and her physician over a considerable period of time. The result is looked forward to with a good deal of apprehension by the patient and her family and the physician must assume an unusual responsibility and exhibit judgments and skills in his part of this important event.

Since obstetric practice has changed, many new techniques in the management of labor have been well publicized in lay journals and other media for publicity. Some patients are naively familiar with these techniques and the physician is

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often embarrassed by questions as to whether he is going to do so and so during labor. They often relate that Dr. Blank looked after a friend and she did not have a labor pain or they may relate that a physician used forceps to deliver the baby of a friend and the baby was badly injured from forceps delivery and, therefore, they do not want forceps used on their baby. Every physician is familiar with the stories of tragedies and successes which have occurred in an obstetric practice. These emotional reactions to a medical service places the physician in a unique position when he chooses to look after an obstetric patient.

In the medical literature most of the new techniques for the management of labor are described and it would be impossible for any one physician to develop competence in the use of all of them. Many of the techniques are of controversial value but some are acceptable and will be universally adopted. I shall discuss in some detail a few of these procedures with which I have become familiar, and some techniques which I have found valuable in my own service. I shall also express my own evaluation of them.

Elective Induction of Labor

Elective induction of labor is a controversial procedure at this time. If one understands from his own experience and judgment what the indications and results will be, I think it is a valuable and safe procedure. There is seldom a real medical indication for the induction of labor and for that reason if one chooses to induce labor, it is usually because of convenience for the physician or his patient. The physician I think is perfectly justified to arrange his obstetric work so that he can do it under the optimum circumstance for himself so long as it does not jeopardize the patient. One justification for the elective induction of labor which in my own experience seems valid, is the long distance which a patient must travel from her home to the hospital. Accidents can occur before she arrives in the hospital if she waits until labor has begun. This applies frequently in a metropolitan area. The arrangement of home circumstances, care for the children during the mother's confinement, and the securing of help are all valid reasons for the patient to want to have her baby at a specific time.

I think we should be candid with our patients and ourselves about the indications for induction of labor and accept the responsibility for this decision. With some patients it will be popular and acceptable and with others it will not be acceptable. However, if we decide to induce labor electively, the procedure must be safe and no morbidity nor mortality can result from the procedure *per se*. This point will be difficult to prove either way, but a practical solution can be known.

The technique which I have used with satisfactory results and no tragedies that I have been able to determine is as follows: The patient is chosen for induction within a week of her expected term who has had a previous normal labor. Seldom is a nulliparous patient chosen. The size and maturity of the child is determined by x-ray study. A vaginal examination is done in the office or clinic and if the cervix is well effaced, the vertex presenting, and the cervix dilated sufficiently to admit a finger without discomfort, the patient is told of the procedure and she is allowed to choose if she wants to have labor induced. The patient is admitted to the hospital the night before the day which is selected for induction of labor. Routine studies and any other indicated studies are made. On admission to the hospital she is prepared for labor and given a sedative to induce a good night's rest. The following morning about 7 a.m. an enema is given of plain water. Sometime between nine and ten a.m. the patient is examined vaginally and the membranes are ruptured with a special type of long and sturdy Allis forceps. After the membranes have been ruptured, a moderate amount of amniotic fluid is allowed to flow in order to accomplish uterine decompression. If the uterus is soft, ½ minim of Pitocin is given intramuscularly to promote an immediate uterine contraction and determine uterine sensitivity to Pitocin. The patient is allowed to have a uterine contraction. The position and station of the presenting part is checked and then the patient is allowed to return to her bed in the labor room. After this procedure an interval of time is allowed for labor to begin spontaneously if it will. In the event labor does not begin spontaneously in six or eight hours, ½ minim of Pitocin is again given intramuscularly. If this fails to start labor, an interval of a few hours is allowed before more Pitocin is given. This plan in my experiences has worked well. I have known of no tragedies. In a few instances labor has been delayed for an undesirable time, twelve hours or longer. In only one instance was it de-

layed so long that I thought a cesarean section should be done, and, in that particular instance I did the induction for what I thought was a post mature infant on a nulliparous patient who had been a sterility problem. I shall not discuss intravenous Pitocin as a means of stimulating uterine contractions although it has been used extensively on my service.

The Determination of the Existence of Labor

Determination that a patient is in labor is frequently not easy and has seemed to me to be a fundamental cause for mismanagement of labor and delivery in many instances. Serious accidents have occurred both to mother and child from mismanagement of a labor that actually did not exist.

Labor can be described as a dynamic process of increasing intensity. By this I mean that the uterine contractions become progressively more painful and increasingly more frequent. I feel that all patients should be examined vaginally early in labor unless the status of the presenting part in relation to the pelvis and the condition of the cervix has been determined by vaginal examination a short time before labor began.

In order to make determinations in labor, I have depended upon vaginal examinations rather than rectal examinations in spite of the prejudices which have developed against this procedure. With the exercise of a careful technique no bad results will develop from vaginal examinations in labor. When labor is progressing so rapidly that no examination is necessary except to determine the station of the presenting part then these determinations, of course, can be accomplished easily and satisfactorily by rectal examination.

Real labor will induce changes in the condition of the cervix and in the relationship of the presenting fetal part to the mother's pelvis which can be recognized only by careful observation and vaginal examination. If these changes do not occur either the patient is not in labor or some mechanical impediment to the progress of labor exists. If the patient is not in labor, a mild sedative or analgesic will stop the labor and give the patient rest and time for the initiation of real labor. If some mechanical impediment to labor exists, the condition should be re-evaluated and managed as indicated. If changes in the status of the presenting part have occurred and the cervix is changing, I think at this point the judicious use of artificial rupture of the membranes will frequently facilitate the progress of labor. The value of this procedure can be demonstrated in instances where before labor began the presenting part was well engaged and in a station of plus one or two, and after labor began considerable fore water develops and the presenting part recedes in its station. It is in such instances particularly that rupture of the membranes will produce dramatically rapid advance of the presenting part and facilitate the normal progress of labor.

At this point, I should like to conjecture somewhat about the mechanics of labor and cervical effacement. The presenting part of the fetus acts as the fulcrum which enables the myometrium to affect its full force by evolving the lower uterine segment and disappearance of the cervix. The density of the vertex for instance is much greater than that of the mobile and compressible fluid in the amniotic sac. It is also more dense than the soft breech. It is for this reason that labor will advance more rapidly after rupture of the membranes in many labors where the vertex is presenting.

Attendance of the Patient in Labor

If one chooses to look after a maternity patient it seems to me that the chief medical attendant should be available for that service continuously and should be present long enough in early labor to determine the existence of labor, the relationship of the fetus to maternal parts and the exact status of the labor. These responsibilities should be personal responsibilities. By careful study of the patient when it is assumed that labor has begun, it is usually possible to determine that the patient is actually in labor and the kind of a labor the patient will have. It is my conviction that real labor is consummated in a relatively shorter period of time than is usually given—three or four hours for a primiparous patient and much less time for a multiparous patient if the patient is watched and managed properly during labor.

Type of Analgesia

Analgesia in labor has always been a controversial problem with obstetricians and has become very good material for the lay medical writers to use to familiarize the public with the dramatics of medical problems. Every medical publicist can make a reputation by writings which

have an emotional appeal to the ready public and certainly painless childbirth will appeal to the emotion of almost all women and men. I have been fortunate in my experience with the use of various analgesias in labor. I have seen most of them used judiciously and injudiciously, and as I reflect from my experiences, I sometimes shudder because of the past injudicious use of them. Through my experience, I have come to the conclusion that one must choose between allowing good, normal labor to progress as it will usually, or else inhibit it with the use of analgesia. I do not mean to imply by this statement that analgesia should never be used and that I never use it. I think I can epitomize my opinion by stating that all types of analgesia inhibit labor to some degree. Many have a deleterious effect on the fetus. If necessary to use analgesia then one should choose an element which is safe and can be used with a technique which has been learned and thoroughly understood. It is not necessary to describe any particular technique at this point because I think the general tendency in obstetric practice at the present time is to use analgesia in a fairly judicious manner.

It would seem that if the attendant will really make himself available to the patient in labor that analgesia and its effects will be less necessary.

When labor has progressed normally, the presenting part will present and will cause bulging of the perineum and perhaps some gaping of the vulva and show of the scalp or other presenting part. It is at this point that I think a well-trained obstetric anesthesiologist should be available to give well-controlled inhalation analgesia with the height of the contraction and pain. This technique must be well controlled or the progress of expulsion will be inhibited. The analgesia must be adequate, however, to enable the performance of an episiotomy. If at this point the pains and progress of labor are too much inhibited, the analgesia may be discontinued and sometimes a small dose of Pitocin (½ minim) may be necessary to stimulate the expulsive forces. Spontaneous delivery will almost always occur after a few well-controlled pains and in the event it does not so happen, outlet forceps may be applied to facilitate delivery of the head under complete anesthesia. When the head is delivered mucous should be allowed to emit from the upper respiratory tract of the infant and the delivery of the other parts of the infant should be very *deliberately planned and carried through without haste.*

I shall not discuss the management of breech deliveries at this point since it requires special skills and techniques. Needless to say, breeches occur in only 4 per cent of instances and they are almost always a special problem.

Occiput posterior and other troublesome positions in labor, I have not considered a part of this presentation. They should be recognized by careful evaluations of the problem during the labor and managed by special consideration.

Technique of the Third Stage of Labor

The technique which I prefer for the management of the third stage of labor is much like the technique referred to as the Brandt procedure in some of the standard textbooks. Apparently the procedure was developed and practiced with the Long Island Hospital group when Dickinson and Pomeroy were active at that institution. Brandt published a report of this procedure in an article which appeared in *The American Journal of Obstetrics and Gynecology,* Vol. 25, 1933. The principle of this technique is to allow the placenta and membranes to separate spontaneously. After separation has occurred, the uterus becomes soft and enlarged. After this softening and enlargement a firm contraction will normally and usually occur. At this point, the uterus should be pushed out of the pelvis by inserting the hand over the abdomen between the symphysis and the uterus. This mechanism may be facilitated by inserting a finger into the vagina and releasing the incarcerated uterus. This manipulation will push the uterus out of the pelvis well up into the abdominal cavity where it can be palpated and manipulated as necessary. Also this procedure will convert the uterus, the lower uterine segment or cervix, and the vagina into one plane and allow the placenta and membranes to be discharged through the cervix without fragmentation. During this procedure a very slight traction on the cord in the direction of the plane of the birth canal and repeated manipulation to mobilize the uterus into the abdomen will facilitate the separation of the membranes and their delivery from the genital tract.

The advantages of this procedure are that the uterus is made available for manipulation through

the abdomen for stimulation when it becomes necessary to promote contraction, and of placing the uterus in a position so that the circulation to the uterus can be controlled by pressure if that becomes necessary.

Some of my colleagues have objected to this procedure because of the possibility of air embolism and also because it may be unnecessarily traumatic. These objections do not seem valid to me if the technique is learned and practiced with understanding, and I have concluded that the advantages far outway its dangers. I think that postpartum hemorrhage from non-contraction of the uterus can always be controlled and complete separation and expulsion of the membranes is most likely to occur.

In this presentation I have tried to present to you some practical problems in obstetrics and particularly the management of labor which I have encountered in my experience on a teaching service in a large metropolitan area.

Obstetric practice is difficult and inconvenient work, but very satisfactory work. This I think is demonstrated by the fact that so many physicians are interested in it. It is a frequently demanded service and many physicians must remain interested in it and work at it. New proven techniques and improved facilities are evolving constantly and these must be utilized to their best advantages. Maternal and fetal mortality and morbidity are being observed and analyzed very critically by our colleagues. It is for this reason that I thought it important to present to you a discussion of this kind.

MICHIGAN MATERNAL MORTALITY STUDY

(Continued from Page 168)

a known salvage of only 38 per cent. There were sixty-four stillbirths, nineteen neonatal deaths, seventy-one undelivered, and eight instances in which the condition of the infant was not stated. Of the group of 121 patients dying from non-obstetrical causes the fetal salvage was even lower. There were only thirty-one live births or a 26 per cent survival. In this group, there were thirteen neonatal deaths, twenty-seven stillbirths, and fifty patients undelivered.

The only other previous maternal mortality study made in Michigan during a two and one-half year period from July 1, 1926 to December 31, 1928, offers an interesting study for comparison of two series of deaths almost a quarter of a century apart. During the 1926-1928 period there were 1,627 maternal deaths occurring in 245,312 live births and in 1950-52 there were 271 deaths from comparable causes occurring in 510,341 live-births (Graph 2). A few observations from the older study are of interest. Of the 1,627 deaths, there were 465 or 28.5 per cent in which abortions were either the direct or indirect eause. This figure did not include criminal abortions, which were not classified among puerperal deaths but as homicides. It was stated in the older report, "if we include criminal abortions, our rate would be considerably increased." In the current series, 24 deaths or 9.2 per cent were related to abortions. Of these, eleven resulted from infection, as compared to 345 septic abortions in 1926-1928. Of course, we have no way of knowing whether or not the incidence of abortion has decreased throughout the years or if this stands as a tribute to the life saving value of the antibiotics!

In the 1926-1928 study, 665 out of the 1627 pregnancies or 40.8 per cent terminated with live births; there were 310 stillbirths and 639 no births including abortions, ectopic gestations and undelivered cases or 949 with no fetal salvage. *We did not improve in this regard during the first three years of the 1950's* (Graph 2).

Your Personal Inventory

We Americans always keep looking to our future. Our past is short, so is our patience. "It is tomorrow that captures our imagination. We like to guess—we want to know." Such is our economic and national philosophy.

But what are the physicians' thoughts as we embark on a new year? In medicine, we cannot ignore or forget our past. We glory in our progress to date. Only by a careful appraisal of our accomplishments and our failures, can we look forward to more progress and better service.

Have you given thought to a personal inventory of your own contributions to medical progress?

Have you gained the profound respect of those you serve? "The medical meeting serves as a grindstone that keeps our wits sharp, fresh and alert." Are you a participant?

Do you give more emphasis to tools, or to experience and judgment?

"Humility is a golden virtue, a potent therapeutic force." "Hope is the single thread that supports the ill patients—it is never to be severed." Every patient who comes to you has fear in his heart. His fears may be on the cost of your services. Try practicing the Golden Rule. Do you allay his anxieties while you diagnose and treat his ailments?

Do you rely on laboratory study to replace a careful history and physical examination?

"Face your blunders fearlessly. When a patient has abruptly discharged his doctor, the doctor has not properly discharged his duties."

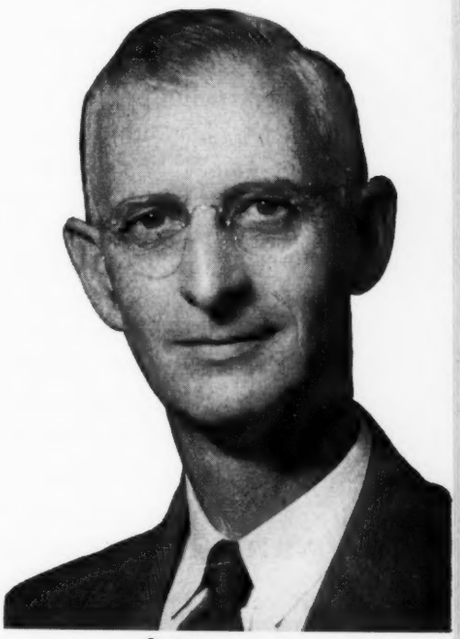
Have you contributed of your time, energy and intelligence to the rapidly increasing obligations of the doctor in Public Relations? The public looks to medicine for much advice and leadership. The scope of these demands is unlimited. The physician who fails to take his share of the profession's responsibility in this new phase of medical practice is shirking his duty.

As you review your Personal Inventory of the quality of your medical practice and service to the public—are you satisfied with your past? Can you look forward with firm resolution to take your part in guiding the destinies of our profession in the future?

Robert H. Baker

President, Michigan State Medical Society

President's Message



Editorial

REINSURANCE

MRS. OVETA Culp Hobby, Secretary of Health, Education and Welfare, talking to the AMA at Miami, November 29, reiterated the administration's program of "reinsurance." She repeated the President's dislike of "socialized medicine," his belief in private enterprise especially in the field of health insurance, and the theory that indigent care is a State problem.

The President's plan is expressed as voluntary, not compulsory. We can conceive that the plan could be just as voluntary as the act establishing federal insurance for bank deposits. It is completely voluntary but no bank could operate without it. Undoubtedly none wishes to, as it could not gain the confidence of the public after all the advertising of the past years of federal insurance on deposits.

The same could happen in health reinsurance. We do not need it. It would add another cost to health insurance because the plan of the government is that "reinsurance" is to be self-supporting within five years. That means another bureaucracy added to the health insurance expenses, paid by the insured.

VETERANS' MEDICINE

COMMANDER Seaborn P. Collins, president of the American Legion, told the House of Delegates at the Miami AMA meeting of the many endeavors in which the AMA and the American Legion are of one accord, including private non-socialized medicine of the best possible quality. He talked primarily about the controversy regarding medical care for non-service-connected disability. He challenged the AMA to appoint a joint committee with the American Legion to study the problem and arrive at a solution.

Michigan has had such a joint committee working for some time and also including all four veterans' organizations instead of only the American Legion.

Spot studies have shown that on any day fifty per cent of patients in general hospitals are either veterans or members of veterans' families. This must be true because there are now 22,000,000 veterans and if the average family is three and one-half in number, that accounts for 77,000,000 people or half of our population. Naturally half the hospital patients are veterans or members of a veteran's family.

This emphasizes the statement made by Commander Collins that the veterans are paying their own way. The problem of abuse of VA hospitals is thus confined to a comparatively small number who (all admit) are getting the most elaborate and complete medical service known and mostly in luxury hospitals with no limit of stay accounting for the enormous expense.

We are trying to solve the abuse of our voluntary insurance plans. Here is another over-utilization of the same ilk. Why cannot a high level committee work it out? We believe Mr. Collins' suggestion is good and it has been followed. The solution is not as simple as the House of Delegates' action last year assumed, but it is possible.

NEEDED FEDERAL LEGISLATION

WE HAVE mentioned needed federal legislation many times, but another suggestion may be of benefit. The Social Security bills need some amendment to make them more just and relieve some hardships. First the provision for loss of benefits has been improved effective January 1, 1955, by reducing to 72 the age at which one's benefits will be paid no matter how much he earns. The present law is quite complicated, but if a person between 65 and 72 earns over $1,200 during the year he will forfeit his payments for every month in which he earned over $80.00. There should be no forfeit at all. *If the man or woman has qualified for Old Age and Survivors Insurance he should receive it without question.*

There should be some provision by which a person who has earned benefit rights and becomes totally or permanently incapacitated could be paid his benefits during that period of disability. As the law now stands this disabled worker can draw nothing until he reaches 65. A third amendment needed is to relieve the doctors from certain bureaucratic domination in certifying to disability.

Such certification can easily be done the same as in industry, by certification of private doctors.

Payroll Deductions

The Congress knows there are over two and a quarter million persons in the employment of the federal government. Industry recognizes that its employes wish many privileges and benefits which may be paid for by payroll deductions. Government should recognize the same obligation and pass a law which authorizes employes to request and obtain payroll deductions for certain specified activities or conditions which should include insurance, health service benefits, community chest donations, savings, and similar programs. This would simplify life generally. Long ago hundreds of thousands of classified government workers would have been getting the same benefits as their friends, Blue Cross and Blue Shield particularly. Up to date, payroll deductions have not been possible from government workers. A simple authorizing law would be sufficient.

Subsidies

Action of the Supreme Court some years ago makes another federal law quite necessary. The Supreme Court decided that anything the government subsidizes it may control. There may not have been any abuses growing out of this decision, but some dangerous situations are apparent. Government has subsidized the schools, and look at the state and federal domination. Medical education is sadly in need of much assistance. We fear what might happen if the necessary funds were advanced by the federal government which has been willing and anxious to get into the picture. The American Medical Association, its members and some friendly industries have attempted for several years to raise the needed money by popular subscription. We have given great sums of money and have helped the schools immensely, but the estimated need right now is about ten million dollars a year to supplement the various monies now available for medical education. The schools cost about $145,000,000 a year to run. Ten million more would give them the needed boost. Private subscription has been woefully inadequate. Government is ever ready to help but we dare not accept.

We suggest that if Government is unselfishly interested, Congress might easily by specific action abrogate the control implication carried by a "subsidy." This action by the Supreme Court could by joint action be declared vacated, and monies given to the medical schools without a control being implied. It could be done, and might solve many health and welfare problems. Blue Cross and Blue Shield have shied from any contacts or implications which might in any way lead to subsidy and domination. Care for the indigent, aged, incapacitated and many groups might be arranged if it were not for this fear of subsidy. A correlary stipulation could be a resolution from the Congress allowing government agencies in dealing with their employes to recognize the insurance principle which is not now done even though the government is probably the greatest insurance organization in existence.

Remove the control implication from whatever could be considered by the government as a subsidy.

SELECTING SPEAKERS

WE wish to thank the membership for their interest and assistance in helping to select the speakers for the Annual Session program. The Michigan State Medical Society is very happy to have your help in making these selections.

When the ballots are returned to the Section Officers, the returns are very carefully weighed and every attempt is made to try to obtain the speakers according to the preference of the membership. Even though the invitations to speak are sent out eight months in advance, occasionally we find the speakers have other engagements and send their regrets. When this occurs, it is necessary for the Section Officers to look elsewhere for a speaker.

We are looking forward to another fine group of speakers at our next Annual Session, thanks to your help and co-operation.

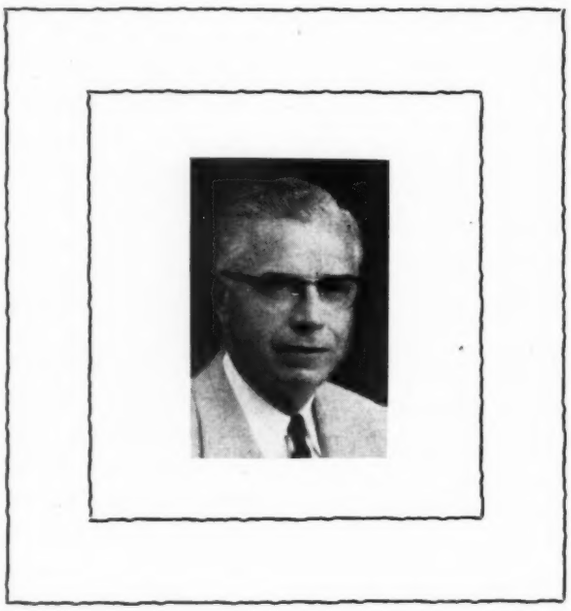
Federal Trade Commission General Counsel Earl Kintner, in a speech before the District of Columbia Bar Association, reported that FTC will take court action against firms which have persisted in monopolistic or unfair trade practices despite formal commission actions forbidding them. He also said charges against seventeen health and accident insurance companies are only a prelude, "many more are in the mill."

Donald E. Johnson

"He who loves his brother walks in the light . . ."

As a man matures, he is likely to become concerned about humanity. When so concerned, he may come to know that humanity is a dignity one must strive to win; full of personal sacrifice and often gained at the price of self-effacing contribution.

Take Donald E. Johnson, of Flint, for example. A new phase of his life began from a neighborly chat over the backyard fence one autumn evening some ten years ago. Not then realizing the future import of his simple question, he asked his neighbor, George Curry, M.D., "What can I do to help in the fight against cancer?"



Right then and there it was decided that his effort would be conducted on an educational basis and a project was conceived that has progressed year after year to achieve no little significance.

Such projects usually get under way after endless debate, definitions, conferences, and bickerings —with the purse strings tightening up jerk by jerk after each argument—but not so in this case. "You go ahead," Mr. Johnson simply said. "Get only the best and I will sponsor it; but, mind you, keep my name out of it."

With Dr. Curry as its chairman, the Cancer Education Committee of the Genesee County Medical Society went to work forthwith. Six months later—after a great deal of time and effort in planning, correspondence, and final arrangements, the Genesee County Medical Society presented its first Cancer Day Program, on March 20, 1946.

The first program followed the same general pattern used in succeeding years. Customarily, five outstanding authorities in various scientific fields related to cancer each make a one-hour presentation on a timely topic concerned with cancer research or treatment. The speakers are procured from nationally known centers of clinical and experimental research, from coast to coast. The Genesee County Medical Society Cancer Day Program, which brings to Michigan doctors of medicine up-to-the-minute details of the progress against cancer, has been established as a tradition; a tradition made possible only by the munificence of its voluntary sponsor, Donald E. Johnson. The Cancer Day Program has been greeted with ever-increasing attendance and enthusiasm, and will be held for its tenth consecutive year on April 14, 1955.

For the first four years, Mr. Johnson was more or less successful in demanding that his sponsorship remain anonymous. In deference to his wishes, every attempt was made to keep his anonymity, but eventually the secret began to leak. So brilliant a light could not be hidden under a bushel, or a container many times that size.

Modesty eventually was forced to yield, and Mr. Johnson was finally introduced from the rostrum to accept publicly the acclaim and homage that was his due. In his shy and whimsical way, he merely asked that he be given the privilege to continue his help.

Donald E. Johnson was born in Flint, a member of a family which came to Genesee County 100 years ago. He grew up in Flint, then attended the University of Michigan, graduating in 1926. Launching his journalistic career with a two-year stay in Lansing, he returned to Flint to stay. Mr. Johnson is now the owner and publisher of the Flint *News Advertiser.*

Mr. Johnson is quite emphatic in declaring he likes Flint and will be happy always to live in Flint with Mrs. Johnson and their three children. In his home community, he is noted for his faculty for just dealing, his unceasing kindnesses, and his

charities, together with a long list of civic activities.

His interest and leadership in cancer education and cancer control work continues in Flint, but now extends far beyond the borders of his native city.

Mr. Johnson is a member of the Genesee County Medical Society Cancer Education Committee—and a working member. He attends all meetings and does his share of the detail work. He is also a member of the MSMS Cancer Control Committee, and holds the important position of Executive Committee member of the Michigan Division, American Cancer Society. Nationally, he served as Director-at-Large on the Board of the American Cancer Society.

One position for which he can be more than proud is his membership on the Advisory Council of the National Cancer Institute. This exclusive group consists of six laymen and six doctors of medicine, and a major function is to pass on all federal money allocated to cancer research. This four-year federal appointment was made in 1953 by the Secretary of Health, Education and Welfare.

Latest and most amazing of Mr. Johnson's adventures for the public good took place last August. Being cognizant of the Harvard conferences which pool all of the sound activities in cancer research through group study, Mr. Johnson decided to do something similar in Michigan. So on August 18, 1954, he invited twenty-five distinguished men from the University of Michigan, representing all its science departments, to meet with a group of prominent medical scientists at a high level conference. Others who attended were an experimental pathologist from Yale, the director of cancer research of the Michael Reese Hospital, a representative from the National Cancer Institute research staff in Washington, and the medical director from the center of the nation's atomic energy activity at Oak Ridge, Tennessee. By plane, bus, and train this group assembled at the Rain Bow Club on the Pere Marquette River in Northern Michigan to be Mr. Johnson's guests at a three-day conference. Important developments in the field of cancer study are expected from this unprecedented meeting.

In 1953, the Genesee County Medical Society elected Mr. Johnson to honorary membership. In September, 1954, the House of Delegates unanimously elected him to honorary membership in the Michigan State Medical Society. This is little indeed to manifest our appreciation for the faith and devotion of a man who has the kind of dreams that make his house a haven for the unfortunate. Yet, at the moment, it's all we have to offer.

—A. C. PFEIFER, M.D.

ACUTE GYNECOLOGIC CONDITIONS

(Continued from Page 195)

rettage completely controlled the bleeding, and none of the patients has had a recurrence. However, these patients are kept under observation for a period of eighteen to twenty-four months before being dismissed from our care.

Summary

A review of the diagnosis and treatment of emergency gynecologic conditions and a discussion of acute appendicitis in the differential diagnosis of these conditions have been presented. Particular emphasis has been given to the bleeding intra-abdominal emergencies since in these the life of the patient so often depends on the accuracy and efficiency with which the diagnosis is made and the surgical treatment carried out.

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Beth Milford

President, State Woman's Auxiliary

Last year when directors of the Woman's Auxiliary to the Kalamazoo Academy of Medicine voted to invite the President-elect of the State Woman's Auxiliary to their annual meetings, the members of the board asked Kalamazoo President Mrs. Keith Bennett what their guest was like.

Mrs. Bennett's reply was typical. She said that Beth Milford had always been so quiet at state meetings that she had begun to wonder how such a person came to be elected to a state office. Then, Mrs. Bennett reported, she had attended the organization meeting conducted by Mrs. Milford after she became President-elect and received a great surprise. The minute Mrs. Milford opened the meeting, Mrs. Bennett continued, her enthusiasm and confidence seemed to electrify the group; everyone went out from that meeting determined that Michigan's Woman's Auxiliary would be a leader in membership that year.

The results speak for themselves: When the year ended, Michigan was third from the top, with eight new counties joining the state organization.

When Mrs. Milford visited Kalamazoo, the favorite question seemed to be, "Why do you sit quietly and say nothing when you know you have the ability to speak?"

The answer: "Because I have always felt there was nothing more unimportant than a Vice President, unless perhaps it might be a Second Vice President. I feel when you are Vice President it is time for listening and learning, and when it is my turn to speak—which is next year—I will."

Mrs. Milford is a native of Pennsylvania, where her grandfather served as Governor and her family founded the Wharton School of Commerce at the the University of Pennsylvania. Born in Bradford, Pennsylvania, Beth Wharton was one of seven children, and lost her father when she was four years old. Her mother started a small department store, and Beth worked in the store from the time she was nine years old. She feels her experience in the store helped her to feel at home among strangers and to overcome a natural shyness. Beth was president of her high school graduating class of 400. She won the gold Keystone Medal as the best high school speaker in Pennsylvania in her junior year. When she was a senior, she won the A.A.U.W. scholarship to the University of Michigan. She received her A.B. degree in 1933 and her Master's Degree in Business Administration the next year, both from Michigan. Mrs. Milford was entirely self-supporting while at the University, and upon graduation was awarded a fellowship to study personnel methods at Lord and Taylor's department store in New York City.

She returned to the University of Michigan in 1936 and attended Law School for one year. After a period of teaching high school English, she became an instructor at Pennsylvania State College. In 1938, Mrs. Milford became head of the Economics Department at St. Mary's College, Notre Dame, Indiana, and in 1940 came to Ypsilanti to teach Economics at Michigan State Normal College.

It was in 1941, that Beth married Albert F. Milford, M.D., who was then a captain in the U. S. Army Medical Corps. They now have five children, one girl and four boys.

While active in many state and local organizations, Beth has always put her family first. Her chief hobby is cooking and baking, which she says is very relaxing because her family is so appreciative. Beth has been a Cub Scout den mother twice, and was a Brownie troop mother for two years. Every Saturday all the family go horse-

back riding. Usually, all five Milfords spend their summers at Portage Lake, near Ann Arbor, where all the children are excellent swimmers, but this past summer after the AMA Convention in San Francisco, the family camped out at four national parks for six weeks.

A little over a year ago, Beth's mother died suddenly. This was a great shock because they had maintained very close ties over the years. A few weeks later, Dr. Milford was stricken with polio and Beth considered very seriously resigning her office in the Auxiliary. However, she said she decided not to 'because it would give every doctor's wife with children a readymade excuse for not helping with Auxiliary work."

Mrs. Milford says she finds that everyone has her own particular responsibility and declares: "By the grace of God, I have five healthy children. Some people have poor health, a parent to take care of, a sick husband or perhaps a sick child. Each one has her own particular responsibility, and it isn't difficult to find an excuse for not doing Auxiliary service if one wishes to. I feel my responsiblities are very happy and light compared to some people's! I am grateful for my good health, and I hope I may always serve in some small way to help further my husband's profession."

In October, Mrs. Milford was invited to be a guest at the thirtieth birthday celebration of the Pennsylvania Auxiliary. Her picture appeared in the *Pennsylvania Medical Journal*, and she had the pleasure of announcing that she had organized an Auxiliary in her home county in Pennsylvania, which the Pennsylvanians themselves had been unable to do previously.

True to her family tradition, Beth has always had an active interest in politics. She has been Washtenaw County Vice Chairman for one of the major political parties. She served for seven years on the Family Agency Board, was active in Red Cross, Cancer Society, Theta Lambda Sigma sorority alumni, University of Michigan Alumni Club, A.A.U.W., Hospital Auxiliary, Junior Chamber of Commerce Auxiliary (of which she was President), Ladies' Literary Club, the Michigan Federation of Women's Clubs, and two square dance clubs.

When she became President of the State Auxiliary, Mrs. Milford resigned her active membership in all other activities except the presidency of the Ypsilanti Child Care Center Board. This is a nursery school and care center for the children of working mothers. Last summer the school building was declared a fire hazard and was torn down and many thought the school would have to be closed. However, Mrs. Milford contracted with the UAW-CIO for the use of their labor hall, and with funds from the Ypsilanti Community Chest, the Ypsilanti Child Care Center is now one of the finest in the state. Mrs. Milford felt she just couldn't give up the presidency of the Center because of the great need of the children and because of its excellent possibilities for good public relations.

I have traveled with Beth all over the state to visit auxiliaries and am often asked, "What is she like?" To me she is best described by a little poem she has hanging in her breakfast room:

Life is like a journey taken on a train,
With a pair of travelers at each window pane.
I may sit beside you all life's journey through,
Or I may sit elsewhere never knowing you;
But if Fate should choose me to sit by your side,
Let's be pleasant travelers—It's so short a ride.

MRS. JOHN W. KEMPER.

HEART DISEASE

(Continued from Page 181)

surgery and if this can be performed without the additional stress of pregnancy, it is, of course, to be preferred.

In conclusion, we learn from this group of obstetrical deaths the importance of a searching history and a thorough physical examination, the basis of all good medical practice. The favorable influence of teamwork between the obstetrician and cardiologist upon maternal health is obvious. The cardiologist's responsibility to the obstetrician and to the patient throughout the period of gestation and throughout the puerperium is stressed. The importance of the functional classification of heart disease has been emphasized so that a clearer differentiation of favorable and unfavorable pregnant cardiacs may be recognized. The unfavorable cardiac can in no way be made favorable for pregnancy, except in the occasional case which may be suitable for corrective surgery.

Michigan's Department of Health

Albert E. Heustis, M.D., Commissioner

NEW RULING OF NATIONAL INSTITUTES OF HEALTH

According to a new ruling of the National Institutes of Health, all pamphlets accompanying biologic products have to carry the following warning: "A separate heat sterilized syringe and needle should be used for each individual patient to prevent transmission of homologous serum hepatitis and other infectious agents from one person to another."

PARAPERTUSSIS MAY BE EXPLANATION

The fact that twice as many cases of whooping cough have been reported this year as last year may be explained in part by the fact that parapertussis often enters the picture in this way. Long drawn-out cases of whooping cough in immunized children may be parapertussis. Whooping cough vaccine does not protect against this form of the disease.

PRESENT STATUS OF FLUORIDATION

About one-sixth of Michigan's people are now drinking water with sufficient fluoride to prevent tooth decay, either because the water is naturally fluoridated or because of controlled fluoridation of their supply. Forty-five communities in the state with a total population of about 868,000 now fluoridate their water.

As was predicted, past experience in securing public acceptance and adoption of water purification and water softening is repeating itself in the campaign for fluoridation. Sporadic and vocal opposition has resulted in a referendum in a number of Michigan cities, with varying results. In only three cities has fluoridation been discontinued after it was instituted, and in each case it was by a narrow vote margin.

LOCAL HEALTH DEPARTMENT SITUATION FAVORABLE

The year-end review of public health progress in 1954 showed that the health officer situation for the full-time local health departments is in the most advantageous position it has enjoyed for many years. Out of 43 full-time health departments, only three do not have a licensed doctor of medicine as administrator. These three have budgeted positions that are not at present filled, and they are being served by acting directors.

The qualifications of the health officers in terms of special academic training and experience is at its highest level also.

Local health departments showed continued progress in the financial support of their programs. Total expenditures of local health departments in Michigan rose from $7,028,156 in the State's fiscal year 1952-53 to $7,517,312 in 1953-54. Even more significant is the rise in local fund support from $6,036,295 in 1952-53 to $6,658,908 in 1953-54.

FROM "THE CURRENT STATUS OF THE TUBERCULOSIS PROBLEM IN MICHIGAN"

1. Tuberculosis continues to be a major health problem in Michigan although the reported incidence, the attack rate, dropped to a new low of eighty-two cases per 100,000 in 1953, as compared with 157 in 1910, 115 in 1940 and eighty-seven in 1950.

2. The number of new cases remains substantially the same, fluctuating between 5,600 and 6,400 annually with an average of 6,001 during the past seven years.

3. Sixty-three per cent of the new cases reported during the past four years were active. The remaining 37 per cent had passed through the communicable stage before discovery.

4. Only 14 per cent of the new cases reported are found in the minimal active stage.

5. The death rate from tuberculosis reached the lowest point in Michigan history in 1953 when 607 persons died from the disease. This is a rate of nine deaths per 100,000 population.

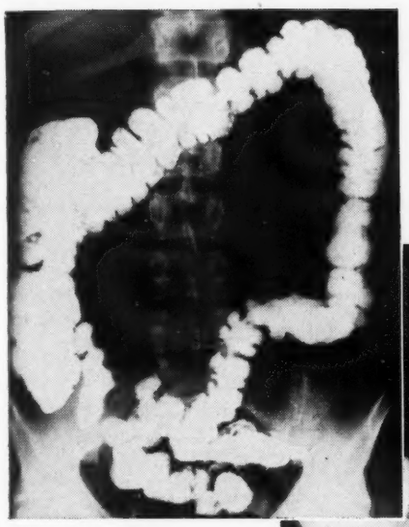
6. During the past six years Department mobile x-ray units took 1,492,029 films throughout the State with an average of thirteen tuberculosis suspects found per 1,000 films.

7. Michigan is now in the most favorable position in its history in number of acceptable tuberculosis beds, there being currently available 5,134 acceptable beds. During March, 1954 for the first time, the number of acceptable beds exceeded the tuberculosis hospital census.

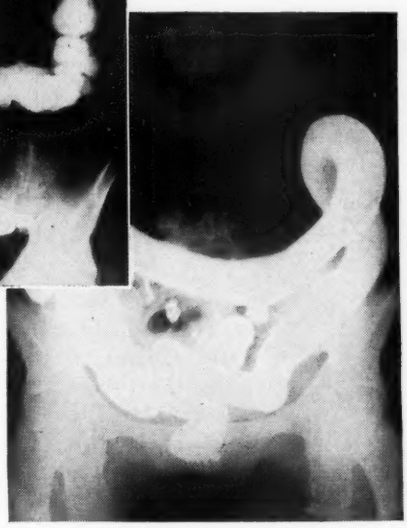
8. Of the patients admitted to tuberculosis hospitals in 1953 with pulmonary tuberculosis 88 per cent were in the moderately advanced or far advanced stage at the time of admission. Of the newly discovered cases of pulmonary tuberculosis during the same period, 83 per cent were found with the disease in the moderately or far advanced stage.

9. In 1949, 73 per cent of the patients discharged from tuberculosis sanatoria were discharged with medical consent. In 1953 the percentage of discharges with medical consent had fallen to 59 per cent. Discharges from sanatoria against medical advice have increased from 27 per cent in 1949 to 41 per cent in 1953. The number of persons discharged against medical advice when their disease is still a public health hazard has doubled between 1949 and 1953. The percentage of persons leaving sanatoria against medical advice has increased 71 per cent between 1949 and 1953.

METAMUCIL® IN CONSTIPATION



Normal Colon



Ulcerative Colitis

Atonic Colon

Smoothage in Correction of Colon Stasis

To initiate the normal defecation reflex, the "smoothage" and bulk of Metamucil provide the needed gentle rectal distention.

Once the habit of constipation has been established, due to any of a large number of causes, it becomes a major problem. Self-medication with irritant or chemical laxatives, or repeated enemas, usually causes a decreased, sluggish defecation reflex and may result in its complete loss.

Rectal distention is a vital factor in initiating the normal defecation reflex, and sufficient bulk is thus of obvious importance in restoring this reflex. Metamucil provides this bulk in the form of a smooth, nonirritating, soft, hydrophilic colloid which gently distends the rectum and initiates the desire to evacuate. Metamucil demands extra fluid, imparting even greater smoothage to the intestinal contents.

It is indicated in chronic constipation of various types—including distal colon stasis of the "irritable colon" syndrome, the atonic colon following abdominal operations, repressions of defecation after anorectal surgery and in special conditions such as the management of a permanent ileostomy. Metamucil is the highly refined mucilloid of Plantago ovata (50%), a seed of the psyllium group, combined with dextrose (50%) as a dispersing agent.

The average adult dose is one rounded teaspoonful of Metamucil powder in a glass of cool water, milk or fruit juice, followed by an additional glass of fluid if indicated.

Metamucil is supplied in containers of 4, 8 and 16 ounces. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.

SEARLE

MEDICAL NEWS

MICHIGAN AUTHORS

Lloyd L. Olsen, M.D., and **Russell T. Woodburne, Ph. D.,** Ann Arbor, are the authors of an article entitled "The Vascular Relations of the Pancreas," published in *Surgery, Gynecology and Obstetrics,* December, 1954.

A. Waite Bohne, M.D., and **Robert J. Fetz, M.D.,** Detroit, are the authors of an article entitled "Interstitial Cystitis," published in *AMA Archives of Surgery,* December, 1954.

Howard B. Latourette, M.D., Isadore Lampe, M.D., and **Fred Jenner Hodges, M.D.,** Ann Arbor, are the authors of an article entitled "Organized Clinical Investigation of Cancer," published in the *University of Michigan Medical Bulletin,* November, 1954.

George E. Shambaugh, Jr., M.D., Chicago, is the author of an article entitled "Management of Hearing Impairment," published in the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY, September, 1954, a digest of which appears in the *Digest of Ophthalmology and Otolaryngology,* November, 1954.

C. H. Wright, M.D., Detroit, **Vaughan C. Mason, M. D.,** Diplomate, American Board of Obstetrics and Gynecology, New York, N. Y., and **Martine Pinton, M.D.,** Paris, France, are the authors of an article entitled "Spontaneous Intraperitoneal Hemorrhage" published in the *American Journal of Surgery,* October, 1954.

J. E. McIntyre, M.D., Lansing, is the author of an article dealing with malpractice phases of psychotherapy published in a recent issue of the *American Journal of Psychiatry.*

Wayne L. Whitaker, M.D., chairman of the Screening-Examining Board, and assistant dean of the University of Michigan Medical School, is the author of an article entitled "Evaluation of the Foreign Trained Physician in Michigan," published in the *Journal of Medical Education* by the Association of American Medical Colleges, November, 1954.

J. DeWitt Fox, M.D., and **Brock E. Brush, M.D.,** Detroit, are the authors of an article entitled "A New Ileostomy-Colostomy Device With a Disposable Plastic Bag and No Cement," published in *Journal of the American Medical Association,* December 11, 1954.

William H. Havener, M.D., Columbus, Ohio, and **Charles T. Knorpp,** Ann Arbor, are the authors of an article entitled "Differential Radiophosphorus Uptake of Lens," published in *AMA Archives of Ophthalmology,* December, 1954.

Windsor S. Davies, M.D., Detroit, and **W. H. Bailey, M.D.,** St. Louis, are the authors of an article entitled "Malignant Melanoma of the Cornea," published in *AMA Archives of Ophthalmology,* December, 1954.

The American College of Surgeons held a four-day meeting in Cleveland, Ohio, February 21-24, 1955, at the Cleveland and Hollenden Hotels. Michigan men participating on the program were: Laurence S. Fallis, M.D., Charles S. Stevenson, M.D., and V. Everett Kinsey, M.D., all of Detroit, and Carl E. Badgley, M.D., James H. Maxwell, M.D., Jack A. MaCris, M.D., and Paul E. Hodgson, M.D., all of Ann Arbor.

* * *

Max Karl Newman, M.D., Detroit, presented a paper entitled "Pharmacotherapeutic Procedures in Cerebral Palsy, Adjunct to Physical Medicine and Rehabilitation" at the thirty-second Session of the American Congress of Physical Medicine and Rehabilitation, Hotel Statler, Washington, D. C., on September 10, 1954.

At the American Institute of Electromyography and Electrodiagnosis at the Hotel Statler, Washington, D. C., September 6, 1954, Doctor Newman presented a paper entitled "Electromyographic Survey of Cervical Cord Root Compression."

* * *

A special March draft call for sixty-eight physicians was announced recently by the State Selective Service Board. Of this number, Wayne County will be asked to provide forty-four physicians and twenty-six dentists.

* * *

Cause for Pride—Michigan Medical Service, as of November 30, had 3,007,391 members. This is the first time we have officially reached the 3,000,000 mark. These figures are arrived at from totalling reports of the thousands of groups. The first accurate physical count is now in process and, as of the end of July, 1954, indicated our summation count as just reported was 99,000 short. When the accurate count by individuals is finished we expect to add another 100,000 to our list. We are justly proud. Michigan was first to reach the first million and the second million, but we believe we are second to reach the third million.

* * *

Elected Chairman—L. Fernald Foster, M.D., of Bay City, Secretary of the Michigan State Medical Society, was elected Chairman of the State Journal Advisory Board at the Miami meeting of the American Medical Association.

* * *

The Gill Memorial Eye, Ear, and Throat Hospital will hold their Twenty-Eighth Annual Spring Congress, April 4th to 9th, 1955, in Roanoke, Virginia. This pioneer institution in refresher courses in this country announces a fine program which includes Albert D. Ruedeman, M.

(Continued on Page 212)

(Continued from Page 210)

D., F.A.C.S. of Detroit, Richard Schneider, M.D., F.A.C.A., and John Sheldon, M.D., F.A.C.S. of Ann Arbor.

* * *

Symposium on Blood—Wayne University College of Medicine held its Fourth Annual Symposium on Blood on Saturday, January 22, 1955. Papers were presented by Raymond W. Monto, M.D. and Brock E. Brush, M.D., Henry Ford Hospital, Detroit; R. A. Heinrich, M.D., E. C. Vonder Heide, M.D., E. A. Sharp, M.D., and K. C. Corrigan, M.D., Harper Hospital, Detroit; Shirley A. Johnson, M.D., Wayne University, and Robert I. McClaughry, Wayne University. Walter H. Seegers, M.D., and E. A. Sharp, M.D., Detroit, presided.

* * *

American Congress of Physical Medicine and Rehabilitation—To stimulate interest in the field of physical medicine and rehabilitation, the American Congress of Physical Medicine and Rehabilitation will award annually a prize for an essay on any subject relating to physical medicine and rehabilitation. The contest, while open to anyone, is primarily directed to medical students, interns, residents, graduate students in the pre-clinical sciences and graduate students in physical medicine and rehabilitation. Any subject of interest or pertaining to the field of physical medicine and rehabilitation may be submitted. Manuscripts must be in the office of the American Congress of Physical Medicine and Rehabilitation, 30 N. Michigan Ave., Chicago 2, not later than June 1, 1955.

* * *

The 33rd annual scientific and clinical session of the American Congress of Physical Medicine and Rehabilitation will be held August 28-September 2, 1955, inclusive, at the Hotel Statler, Detroit. Scientific and clinical sessions will be given August 29, 30, 31, September 1 and 2. All sessions will be open to members of the medical profession in good standing with the American Medical Association.

In addition to the scientific sessions, annual instruction seminars will be held. These lectures will be open to physicians as well as to therapists, who are registered with the American Registry of Physical Therapists or the American Occupational Therapy Association.

Full information may be obtained by writing to the executive secretary, Dorothea C. Augustin, American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois.

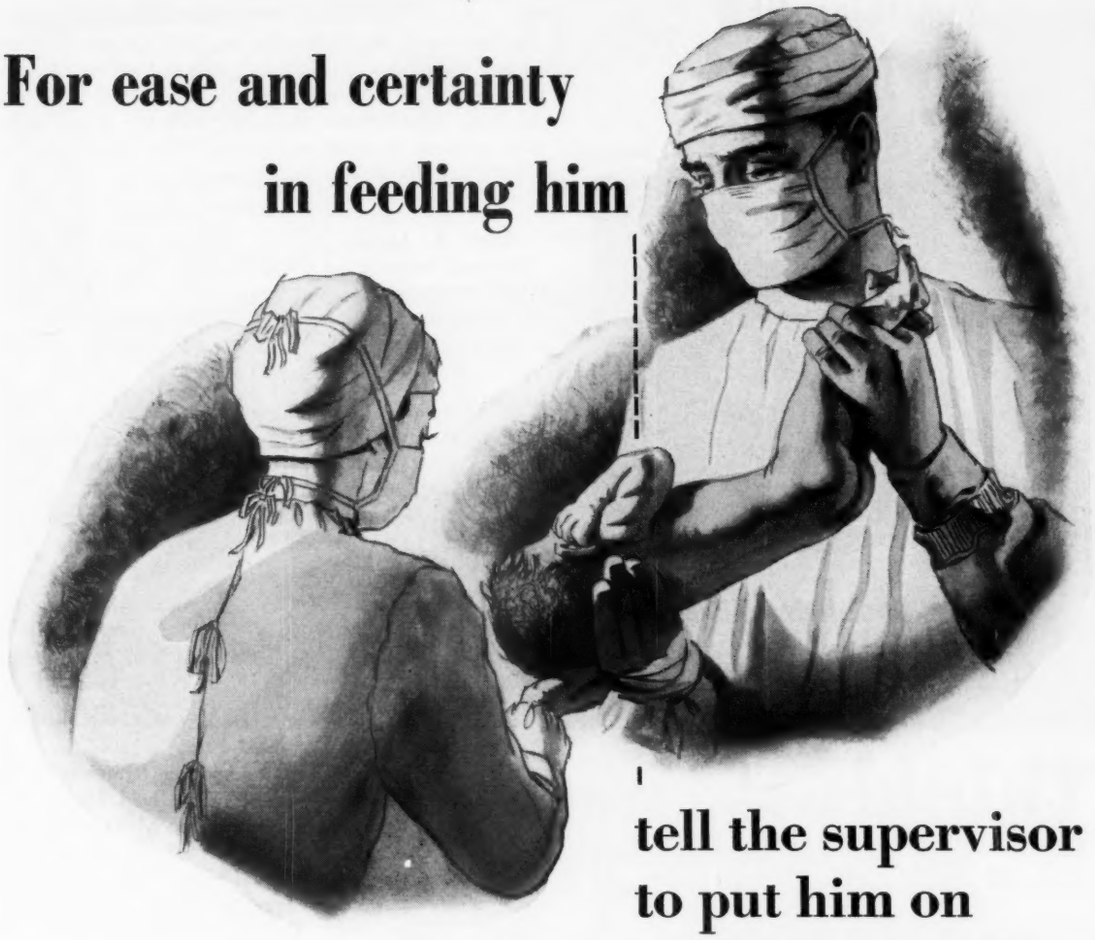
* * *

General Otis O. Benson, Jr., of the U. S. Air Force Medical Service, and currently head of the Aero Medical Association, announces that this organization would hold its 26th Annual meeting at the Hotel Statler, Washington, D. C., from March 20 through 23, 1955.

Medical people from many countries throughout the world are expected to attend and participate in the presentation of scientific reports on aviation medicine. The

(Continued on Page 214)

For ease and certainty in feeding him



tell the supervisor to put him on "BAKER'S MODIFIED MILK"

Suitable for all infant feeding from birth to the end of the first year, Baker's Modified Milk is a time-saver for busy physicians and hospitals. With Baker's, there's hardly any chance of error — simply dilute to prescribed strength* with water, previously boiled.

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	Baker's	Boiled Water
First 5 days of life	1 part	2 parts
Second 5 days	1 part	1½ parts
After 10th day	1 part	1 part

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

(Continued from Page 212)

first meeting of the association was held October 7, 1929 during which it was established that one of the primary aims would be to promote safety in aviation. This aim has been fulfilled over the years until the organization now exercises international influences in stimulating the science and art of aviation medicine.

* * *

Harry R. Lipson, Detroit, recently was appointed Managing Director of WJBK-Radio. Mr. Lipson has served in the capacity of advertising representative for the Michigan State Medical Society for many years.

Congratulations, Harry!

* * *

The Foundation of the American Society of Plastic and Reconstructive Surgery, Inc., announces its 1955 Scholarship Contest. For detailed information, write to the Award Committee, c/o The Foundation, 30 Central Park South, New York 19, New York. Manuscripts will be accepted by the Award Committee up to June 30.

* * *

The Aero Medical Association announces its 26th Annual Meeting for March 21-23, 1955, at the Hotel Statler, Washington, D. C. For program, write R. J. Benford, M.D., General Chairman, P.O. Box 1607, Washington 13, D. C.

* * *

The Ninth Annual M.D. Anderson Symposium on Fundamental Cancer Research will be held March 10-11-12, 1955, at the University of Texas M. D. Anderson Hospital and Tumor Institute in the Texas Medical Center, Houston. For program, write The University of Texas M. D. Anderson Hospital and Tumor Institute, Houston, Texas.

* * *

James Barron, M.D., Detroit, was one of the guest speakers at a special Heparin Symposium held on December 16 by the Academy of Medicine of New Jersey at Newark. A film giving the view of the speakers was prepared for showing to medical groups. Physicians interested in viewing the film should write to the Academy at 91 Lincoln Park South, Newark, New Jersey.

* * *

The new 19th Edition, American Medical Directory, is now in galley form. A Directory information card has been mailed to you requesting information to be used in the new Directory. The AMA would appreciate your returning your filled-in card as promptly as possible.

* * *

Lawrence J. Linck, Chicago, has resigned as executive director of the National Society for Crippled Children and Adults. Mr. Linck will continue to serve the Society in his voluntary role as secretary and as consultant to the Board of Trustees. His resignation climaxes a ten-year record of achievement marked by phenomenal growth in the number of crippled children helped and the kinds of professional services made available to them. Under Mr. Linck's direction, the National So-

(Continued on Page 216)

NEW VICEROY GIVES SMOKERS

20,000 FILTERS

in every Viceroy Tip

Only Viceroy has this new-type filter. Made of a non-mineral cellulose acetate—it gives the greatest filtering action possible without impairing flavor or impeding the flow of smoke.

Smoke is also filtered through Viceroy's king-size length of rich costly tobaccos. Thus, Viceroy smokers get *double the filtering action* . . . for only a penny or two more than brands without filters.

WORLD'S LARGEST-SELLING FILTER TIP CIGARETTE

New King-Size Filter Tip **VICEROY**

ONLY A PENNY OR TWO MORE THAN CIGARETTES WITHOUT FILTERS

(Continued from Page 214)

ciety is the largest voluntary organization in the world serving the crippled.

* * *

The Second Citizens Public Health Conference sponsored by the University of Michigan School of Public Health is scheduled for March 3-4-5, 1955, School of Public Health, University of Michigan, Ann Arbor. The program is designed to achieve a maximum of audience participation with brief non-technical presentations given by specially qualified persons, covering the subjects of Tuberculosis, Chronic Illness and Health Problems of Advancing Urbanization.

* * *

The Second Symposium on Office Procedures for the General Physician was held at the Sheraton-Cadillac Hotel, Detroit, on February 9. Kenneth W. Toothaker, M.D., Lansing, President of the Michigan Academy of General Practice; Edwin H. Fenton, M.D., Detroit, President of the Wayne County Medical Society; and F. P. Rhoades, M.D., Detroit, Chairman of the Education-Program Committee of the MAGP, served as Moderators. The Symposium was sponsored by the Wayne County Medical Society and the Wayne County Academy of General Practice.

* * *

President R. H. Baker, M.D., Pontiac, and Secretary L. Fernald Foster, M.D., of Bay City, were guest speakers at the February 1 meeting of the Livingston County Medical Society, in Howell. Dr. Baker's subject was "What MSMS Is Doing for You"; Dr. Foster spoke on "Take Your Pick from Twenty-Six"—referring to the new projects for county medical societies listed in the MSMS booklet, "Winning Friends for Medicine."

* * *

Thanks to "professional courtesy" and a sincere desire to provide better understanding of health and medicine, the Michigan Foundation for Medical and Health Education has received a contribution which, in time, may lead the way to a sizable sum if other Michigan doctors of medicine follow the example of Paul S. Sloan, M.D., of Houghton.

When Dr. Sloan recently provided medical care for the wife of Addison B. Aldrich, M.D., of Hancock, he had an idea which other Michigan doctors of medicine might adopt. Mrs. Aldrich is enrolled as a member of the Michigan Medical Service, but, following the tradition of "professional courtesy" care without cost among M.D.'s and their families, Dr. Sloan asked Blue Shield to make the $30 payment due him payable to the Michigan Foundation for Medical and Health Education.

Subsequently J. C. Ketchum, Executive Vice President of Michigan Medical Service, forwarded such a check to E. I. Carr, M.D., of Lansing, President of the Foundation.

MSMS members who would like to see the great work of the Michigan Foundation for Medical and Health Education continue and expand, might do as

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(Continued from Page 216)

Dr. Sloan did in cases where they treat M.D.'s or members of their families eligible under Blue Cross or other medical insurance plans. Contributions to the Foundation may be addressed to E. I. Carr, M.D., President, Michigan Foundation for Medical and Health Education, Inc., 606 Townsend St., Lansing 15, Michigan.

* * *

John W. Hedback recently joined the staff of the American Medical Education Foundation in the capacity of associate executive secretary. Through many years of hospital public and community relations work, Mr. Hedback has gained valuable experience which will assist him in the development of state and local committees. The son of a physician, the late Axel E. Hedback, M.D., of Minneapolis, he has a keen interest in the problems of medical education.

* * *

Voluntary major medical insurance has not developed as rapidly as anticipated "because there is no standard product and each company entering the competition will advance new ideas so that the prospective buyer becomes hopelessly confused."

Such was the opinion expressed recently by E. B. Whittaker, Vice President of the Prudential Insurance Company of America, before the Insurance Conference of the American Management Association.

Outlining some of the problems faced by modern insurance companies in providing insurance for major medical expenses, Mr. Whittaker referred to an investigation conducted among Prudential employes earning $5,000 and more yearly, which led to four important conclusions. These conclusions, which he said are now pretty generally recognized as the mainstay of scientific rate making, were:

1. The cost of major medical expense varies directly with income.
2. It increases with age in pretty much the same way as the mortality curve does, with a cost *at age 65 being roughly ten times that at age 35.*
3. It varies with geographic area.
4. There is what we might call a 1-2-3 cost among members of the family. If the employe's claim cost is represented by two, his wife's is three, and his dependent children as a unit only one.

Mr. Whittaker pointed out that 90 million of the 150 million Americans are covered against hospitalization, and that of the remaining 60 million many are uninsurable or could not pay the premium. Likewise many (the farm population, for example) who could afford the premiums, cannot be insured under group policies, and "a company cannot afford to give retail service at wholesale prices." Still others do not need private insurance, because they are covered in some other way

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(members of the armed forces, persons in public institutions, etc.).

Mr. Whittaker declared that the insurance industry is making great strides each year to bring the benefits of health insurance to all who might be covered.

He was strongly of the opinion that major medical must be a comprehensive coverage and that it must be liberal in its limitations upon care for pre-existing conditions.

In support of this, Mr. Whittaker said, "From all the experience we have had it is easier to enroll employes on liberal benefits than on limited benefits at a lower cost."

* * *

MEDICAL TELEVISION SHOWS OVER WJBK-TV
Sponsored by the Michigan Health Council

Dec. 5—Alcoholism—Ralph Daniel, Lansing; Hartman Lichtwardt, M.D., Detroit

Dec. 12—S. D. Day—Donald Slutz, Detroit; Lloyd Praedel, Detroit

Dec. 19—Home Accidents—John R. Brown, M.D., Detroit

Dec. 26—Living Insurance—A Film

* * *

Men are **boys** who do not grow up—they slow up.—Anonymous

Wayne University College of Medicine was featured in an article in the *Journal of the Student American Medical Association*, November, 1954, Number. The story, giving a historical account of Wayne's rise since its 1868 founding, was well illustrated with pictures of its new medical science building and the Lafayette Clinic.

The Grace Hospital of Detroit will hold a Grace Hospital Dinner during the Michigan Clinical Institute for all members of the staff and former staff members, residents, and interns. The dinner will be held at the Sheraton-Cadillac Hotel on Wednesday evening, March 9, 1955. Cocktails at 6:30 P.M., dinner at 7:30 P.M. The party will be stag, dress informal.

Invitations and reservation cards will be mailed soon to all known former staff members, residents and interns and these must be returned to Mr. Wm. Middleton, Assistant Director, The Grace Hospital, Detroit 1, Michigan, by February 28, 1955, if you wish to attend.

This will give former associates of the hospital an opportunity to renew old acquaintances and to meet the new Hospital Director, Dr. Roger DeBusk.

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GENESEE COUNTY MEDICAL SOCIETY TENTH ANNUAL CANCER DAY

Wednesday, April 13, 1955
Merliss Brown Auditorium
Hurley Hospital—Flint, Michigan

Morning Session

LAUREN V. ACKERMAN, M.D.
Department of Surgery, Washington University, St. Louis, Missouri
"The Prognosis of Cancer from the Viewpoint of the Surgical Pathologist"

JUAN A. DEL REGATO, M.D.
Director, Penrose Cancer Hospital, Colorado Springs, Colorado
"The Outstanding Indications and Possibilities of Radiotherapy in the Treatment of Cancer"

OSCAR V. BATSON, M.D.
Chairman, Department of Anatomy—Graduate School of Medicine, University of Pennsylvania, Philadelphia
"Venous Function and Its Role in the Spread of Cancer"

Afternoon Session

BRIAN BLADES, M.D.
Department of Surgery, George Washington University, Washington, D. C.
"The Present Status of the Treatment of Pulmonary Cancer"

FRANK H. BETHELL, M.D.
Department of Internal Medicine, University of Michigan, Ann Arbor
"Chemotherapy in the Management of Leukemia"

CORNELIUS P. RHOADS, M.D.
Medical Director of Memorial Hospital, New York City
"Ten Years of Progress with the Cancer Problem"

PANEL DISCUSSION
"Current Cancer Problems"

Presiding

Morning Session:	ROBERT H. BAKER, M.D.—Pontiac — President, Michigan State Medical Society
Afternoon Session:	GRANTLEY W. TAYLOR, M.D.—Department of Surgery, Harvard University—Boston
Moderator of Panel Discussion:	GRANTLEY W. TAYLOR, M.D.

Durant Hotel

Social Hour—5:30 p.m.
Subscription Dinner—7:00 p.m.
Send dinner reservations to 900 Begole St., Flint

Communications

Dr. Wilfrid Haughey, Editor
THE JOURNAL
610 Post Building
Battle Creek, Michigan

Dear Doctor Haughey:

Your very courteous official letter has been forwarded to me at our cottage on Lake Michigan where we are spending the hot weather months.

The honor which has been planned for me comes as a complete surprise and I do not feel that I am worthy of such a distinction. My efforts would have been very futile in my capacity of Maternal Health Consultant had I not had the most sympathetic co-operation and valuable advice from the Maternal Health Committees and from the Michigan State Medical Society and the Michigan Department of Health.

My great regret is that because of a chronic cardiac condition I am forced to relinquish all professional activities and my interest in Maternal Health must be purely academic. I miss the very pleasant calls that I used to make on you and upon hundreds of other Michigan physicians who always made me feel very welcome.

As I rest on the shores of beautiful Lake Michigan and enjoy the marvelous sunsets, I will look forward with gratitude and satisfaction to the February edition of THE JOURNAL.

With all good wishes and thanks for the honor,

Sincerely,
ALEXANDER M. CAMPBELL, M.D.

Whitehall, Michigan
August 9, 1954

William M. LeFevre, M.D.
606 Hackley Bank Building
Muskegon, Michigan

My dear Bill:

Many thanks for THE JOURNAL of the Michigan State Medical Society. I feel that the cover is exceptionally good and certainly the articles devoted to the subject of diabetes are superlative. I think your organization has really gone over big for diabetes and I am sure that I express the feeling of the entire Council when I say many thanks for a job well done for diabetes and the diabetic.

Do hope that I see you in Atlantic City in June or in Philadelphia at the Post Graduate Course in January. Give my sincerest best regards to your good wife and trust that you are well.

With kindest personal regards, I am

Very cordially yours,
JOHN A. REED, M.D.
Secretary, American Diabetes Association

Washington, D. C.
December 27, 1954

FELLOWSHIP STIPENDS NOT TAXABLE

In a decision affecting 32,000 foundations and many thousands of physicians, scientists, and scholars, the Tax Court of the United States has held that research and study grants from philanthropic organizations are not taxable. The decision, which reverses a 1951 finding of the Commissioner of Internal Revenue, holds that fellowships are gifts, and therefore are not taxable as income. Previously, grants were regarded as income, and taxable as such. The Tax Court ruling came as the result of a test case brought by George Winchester Stone, Jr., a Washington (D. C.) professor, in regard to a Guggenheim Foundation literature grant.

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column, and this will be deemed by us as full compensation to those sending them. A selection will be made for review, as expedient.

SCIENCE AND MAN'S BEHAVIOR, the Contribution of Phylobiology. By Trigant Burrow, M.D., Ph.D. Edited by William E. Galt, Ph.D. Including the text of "The Neurosis of Man." New York: Philosophical Library, 1953. Price $6.00.

PEPTIC ULCER PATTERNS. Diagnosis and Medical Treatment by Lucian A. Smith, A.B., M.D., M.S. in medicine, F.A.C.P., Assisting Professor of Medicine, Mayo Foundation Head of Section, Division of Medicine, Mayo Clinic, and, Andrew B. Rivers, M.D., M.S. in medicine, F.A.C.P., Late Associate Professor of Medicine, Mayo Foundation Consultant, Division of Medicine, Mayo Clinic, Rochester, Minnesota. Forward by George B. Eusterman. New York: Appleton-Century Crofts, Inc., 1953.

MICROBIOLOGY AND PATHOLOGY. By Charles F. Carter, B.S., M.D., Director, Carter's Clinical Laboratory, Dallas, Texas; Consulting Pathologist, St. Louis Southwestern Railway Hospital, Texarkana, Arkansas; formerly instructor in Pathology and Applied Microbiology, Parkland Hospital School of Nursing, Dallas, Texas; formerly Director of Laboratories Parkland Hospital; and Alice L. Smith, A.B., M.D., Instructor in Microbiology and Pathology, Parkland Hospital School of Nursing, Dallas, Texas; Assistant Professor of Pathology, Southwestern Medical College of the University of Texas; Consulting Pathologist, Children's Medical Center, Dallas, Texas. 260 Illustrations, Fifth Edition. St. Louis: C. V. Mosby Co., 1953. Price $5.50.

ILLUSTRATED REVIEW OF FRACTURE TREATMENT by Frederick Lee Liebolt, A.B., M.D., Sc.D., LL.D., attending surgeon in charge of Orthopedics, the New York Hospital, attending Orthopedic Surgeon, Hospital for Special Surgery, Associate Professor of Clinical Surgery (Orthopedics), Cornell University Medical School. First Addition. Los Altos, California: Lange Medical Publications, 1954. Price $4.00.

LOW BACK PAIN AND SCIATICA. By Louis T. Palumbo, M.D., Des Moines, Iowa. 35 Illustrations. Philadelphia, London, Montreal: J. B. Lippincott Company, 1954. Price $3.00.

THOUGHTS ABOUT LIFE. By Felix Friedberg. New York: Philosophical Library, 1954. Price $2.50.

HUGH ROY CULLEN, A Story of American Opportunity. By Ed Kilman and Theon Wright, Illustrated by Nick Eggenhoffer. New York: Prentice-Hall, Inc. Price $4.00.

We have received a pre-publication copy of the biography of Hugh Roy Cullen. Had we lived in Texas, we undoubtedly would be very familiar with the name Cullen. He started life with very meagre education and little opportunity other than that he made himself. He pumped oil and accumulated enough money so that he has given away or established foundations for the expenditures of $160,000,000.

He has been interested in many things—at one time

he purchased a radio network. He has given to medical schools and hospitals, and in many ways has made himself very useful.

The book, 370 pages, is challenging reading, and puts before us a new personality.

FLUID AND ELECTROLYTE THERAPY. By Franklin L. Ashley, B.S., M.S., M.D., Assistant Professor of Surgery, University of California Medical Center, Los Angeles, and Horace G. Love, B.S., M.D., Dallas, Texas. Philadelphia, London, Montreal: J. B. Lippincott Company, 1954. Price, $3.00.

This pocket-sized volume contains nothing new as regards fluid and electrolyte therapy. It is a primer to be used in teaching medical students and hospital house officers. For this purpose, it is excellent. The physician who wants a brief reference will find it useful.

J.W.H.

HANDBOOK OF TREATMENT. By Harold Thomas Hyman, M.D., author of "Integrated Practice of Medicine, Handbook of Differential Diagnosis." Philadelphia and Montreal: J. B. Lippincott Company. Price $8.00.

Handbooks of treatment are most welcome as a ready reference. This one is strictly what it claims to be. It is an alphabetical reference, each topic divided into several paragraphs: First and most important—"General Principles"—that may be all but if needed "Immediate Care" will follow, then "Continuing Care" sometimes "Diagnosis," "Presentation," "Treatment" are given special consideration. The book is almost entirely outline in most cases, but when needed there is full discussion. Drugs are also included, for instance, penicillin gets three pages. This is a handy quick reference.

CIBA FOUNDATION SYMPOSIUM ON HYPERTENSION, Humoral and Neurogenic Factors. Editors for the Ciba Foundation, G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch. and Margaret P. Cameron, M.A., A.B.L.S. Assisted by Joan Etherington. 73 Illustrations. Boston: Little, Brown and Company, 1954. Price $6.75.

This symposium is another sponsored by the CIBA Foundation and brings together leading investigators from many global points, all with a common interest in hypertensive vascular disease.

These investigators have approached this perplexing problem from the humoral and neurogenic standpoint, and have presented their most recent endeavors concerning hypertension. Presentation is followed by a round-table discussion which makes the compilation of this symposium even more important. The papers are presented in an informal manner with illustrations and many facets of the problem are probed. These include renin, angiotonin, hypertensinogen, cerebrotonin, serotonin, V.D.M., and V.E.M., and cross-circulation experiments concerning cerebrotonin. The role of electrolytes and the kidney in hypertension and the quantitative estimation of serotonin and drugs which are antagonistic to serotonin is well covered.

Although these papers offer new insight into the prob-

lem, of even more importance they offer varied opinions of the various contributors regarding their views and the reader is afforded unpublished data.

The role of the adrenals and steroids are included as well as the approach to treatment by sympathectomy and/or adrenalectomy.

The index is small but of no handicap. The data included in this symposium are new, and the not so recent views, which have been re-explored, should be of interest to physiologists, pharmacologists, clinicians and research workers in the field of hypertension.

THIS PACE IS NOT KILLING US. By J. I. Rodale. Emmaus, Pennsylvania: Rodale Books, Inc. Price $1.00.

This is an extremely interesting and challenging little book, abundantly worth the price. The text is that we are being killed (heart disease, dropping dead, et cetera) not because of stress, but of poor nutrition, and insufficient and properly regulated exercise. It is not stress or worry—it is improper living. "Hardly an issue of a business magazine fails to remind the poor, tired, frantic businessman that the tempo of life is killing him." "Let us do away with this nonsense and take our vacations because we like vacations and time off—not because we're afraid we'll drop dead without them."

The conclusion and appendix tell how the author, a doctor and a "heart case," regulated his own pulse and blood pressure by regular exercise; also how he determined which foods were not good for him, and this reduced his pulse a few more beats saving an enormous amount of energy every day. Try opening and closing the fist and moving it two inches 21,000 times day. That was the energy saved.

We were intrigued by the book.

BLOOD COAGULATION. Collected Papers by Walter H. Seegers and associates from 1938-1953: N. Alkjaersig, E. B. Andrews, J. F. Braden, K. M. Brinkhous, B. M. Daly, E. L. DeGowin, L. Doub, J. L. Fahey, M. M. Guest, J. F. Johnson, P. D. Klein, E. R. Loew, E. C. Loomis, R. I. McClaughry, D. A. McGinty, E. T. Mertz, K. D. Miller, R. C. Murphy, M. L. Nieft, T. B. Patton, C. C. Pfeiffer, C. L. Schneider, W. H. Seegers, H. P. Smith, C. S. Stevenson, E. M. Sykes, Jr., R. T. Tidrick, J. M. Vanderbelt, A. G. Ware, and E. D. Warner.

This represents the collection of papers by an energetic worker in the field of blood coagulation.

The senior author and his associates have never failed to shed light on the perplexing problem of blood coagulation. The style of writing of the senior author is energetic and imparts to the reader an enthusiasm which is impelling and nutrient of a wealth of factual data. The research and study has covered a span of many years and the senior author has lost none of the zeal which characterizes his work.

This collection of papers affords the reader a voluminous bibliography and readily accessible reference. The data available is tremendous and can be recommended to the physiologist, pharmacologist, hematologist and clinician.

Classified Advertising

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PHYSICIANS NEEDED IN MICHIGAN—At Caro, Ionia, Lapeer and Mt. Pleasant, with or without experience. Salary from $8,000 to $10,500, depending upon qualifications. Write: Michigan Civil Service Commission, Lansing 13, Michigan.

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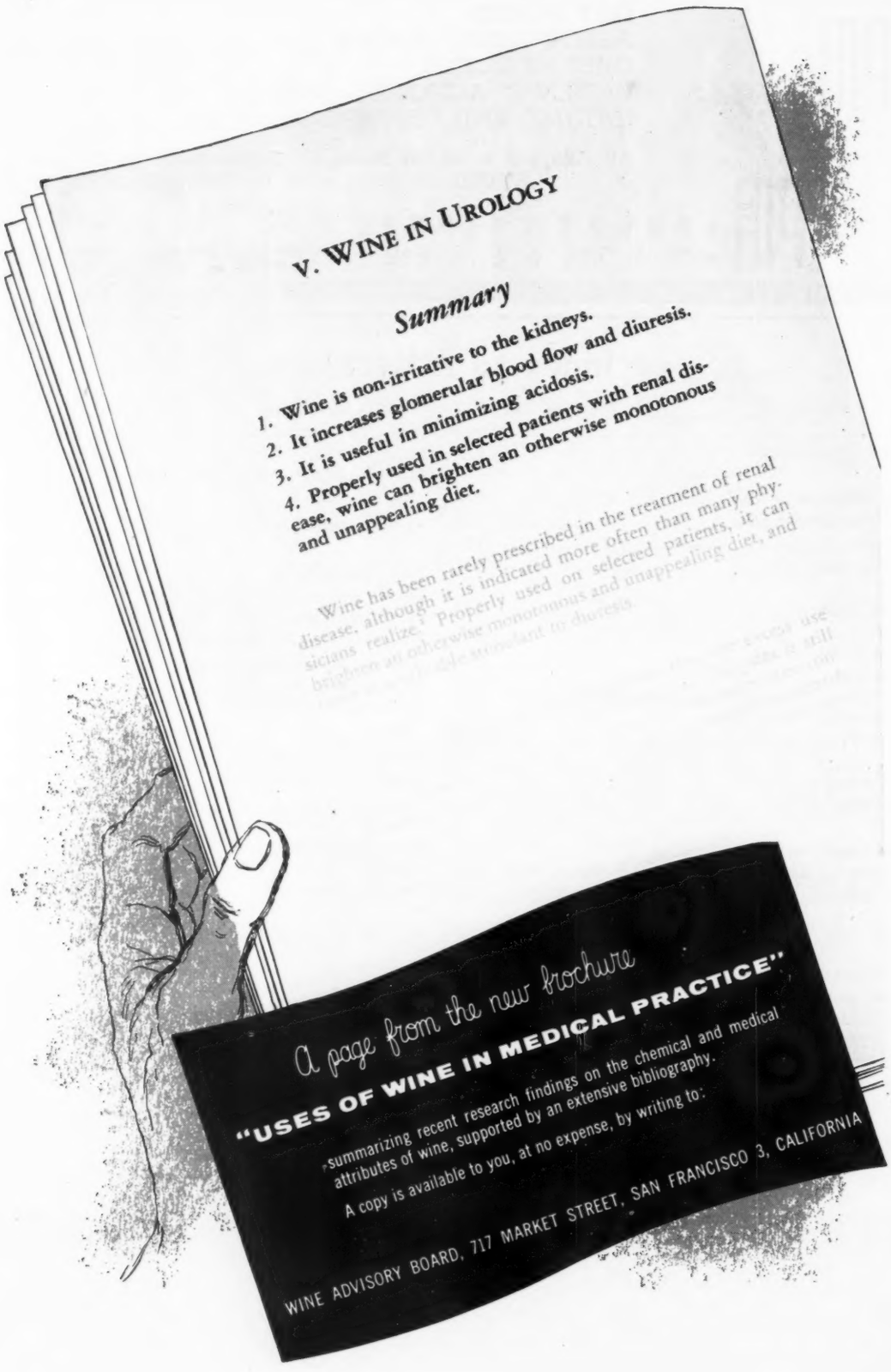
V. WINE IN UROLOGY
Summary
1. Wine is non-irritative to the kidneys.
2. It increases glomerular blood flow and diuresis.
3. It is useful in minimizing acidosis.
4. Properly used in selected patients with renal disease, wine can brighten an otherwise monotonous and unappealing diet.
A page from the new brochure
"USES OF WINE IN MEDICAL PRACTICE"
summarizing recent research findings on the chemical and medical attributes of wine, supported by an extensive bibliography.
A copy is available to you, at no expense, by writing to:
WINE ADVISORY BOARD, 717 MARKET STREET, SAN FRANCISCO 3, CALIFORNIA


For Nasal Congestion
in THE COMMON COLD
Physiologically acceptable Neo-Synephrine hydrochloride solution promptly constricts the engorged nasal capillaries which are responsible for nasal congestion in the common cold. When the nasal mucosa is reduced to its normal state, the nasal passages resume their proper patency, drainage is possible, and the patient can again breathe freely.
By its shrinking action on the nasal mucosa, Neo-Synephrine helps to keep the sinuses aerated and the openings to the eustachian tubes clear.
Neo-Synephrine within minutes produces decongestion that lasts for hours.
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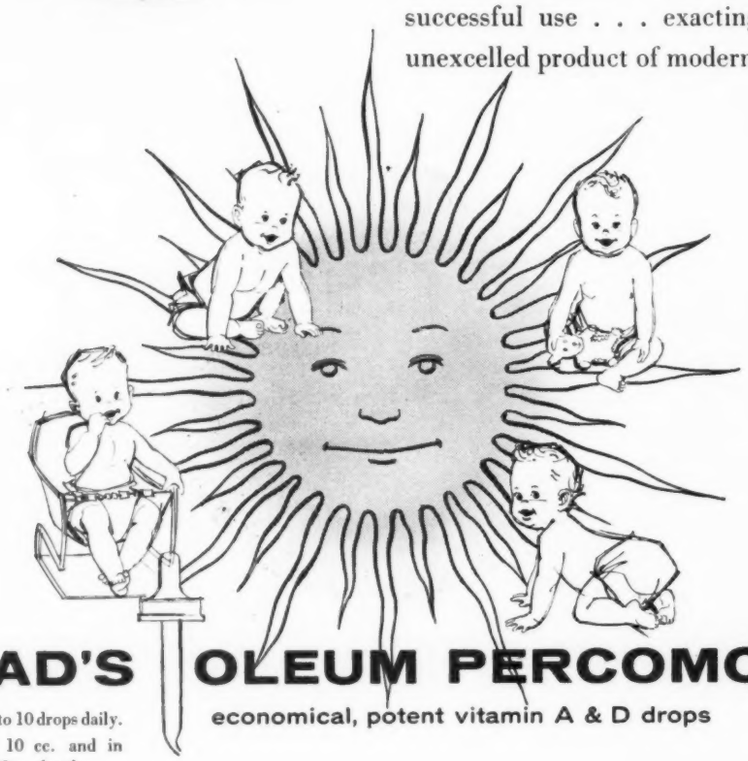

MEAD'S OLEUM PERCOMORPHUM

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